Wales' Future Generations Challenge the World for the "Sitting" Gold Medal

It's Time to MOVE the Bottom Line

2018

Active Healthy Kids WALES Report Card

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Summary of Indicators and Grades

Physical Activity and Health Behaviour Outcomes	
Overall Physical Activity 18.4% of children and young people aged 11-16 years met the recommendation of at least 60 minutes of MVPA every day of the week; 16.8% children and young people aged 11-16 usually exercise in their free time every day of the week[1]. In another survey, 51% of 3-17 year olds were active for at least an hour seven days a week[2].	D+
Organised Sport Participation 55% of children and young people aged 11-16 years take part in organised activities outside of school/outside of lessons[1].	C+
Active Play 41% of children aged 5-17 years reported playing out most days[3]. In another survey, 44% of 11-16 year olds exercised in their free time during their summer holidays[1].	C-
Active Transportation 44% primary school children and 33% secondary school pupils travel actively to school (walk with an adult, walk on their own or with other children, cycle)[2]. In another survey, 33.8% of children and young people aged 11-16 years walk/cycle to school; 36.1% children and young people walk/cycle from school[1].	D+
Sedentary Behaviours 80% of children/young people aged 11-16 years spend 2 or more hours sitting in their free time (e.g. watching TV, using a computer or mobile phone, travelling in a car or by bus, sitting and talking, eating and studying) on weekdays and 87% on the weekend[1]. In another survey, 81% of children had at least two hours screen time (using electronic devices or watching television) on a weekday, and over 92% on a weekend day[1].	F
Physical Fitness No national data covering all components of physical fitness and full age range therefore inconclusive.	Inc.
Physical Literacy Physical Literacy sub-indicators: Physical competence – Dragon Challenge 2017 = D+[4]; Motivation – No Data = INC; Confidence – No Data = INC; Knowledge and understanding- No Data = INC. Overall Physical Literacy is therefore inconclusive[5].	Inc.
Settings and Influences on Physical Activity and Health	
Family and Peers 59% of parents were active for 150 minutes+ a week, 8% of parents take part in vigorous activity for >75 minutes/ week, 31% of parents take their child to the playground and 20% of parents take part in informal games such as playing Frisbee[2].	D
School No updated data available for 'School' since AHK-Wales 2016, therefore School is inconclusive.	Inc.
Community and Environment No updated data available for 'Community and Environment' since AHK-Wales 2016 Report Card, therefore Community and Environment is inconclusive.	Inc.
Government 21 Policy documents assessed - Health; Sport; Education; Environment; Transport; Urban Design/ Planning; Other (Play, Sustainable Development; Cross-cutting) Used HEPA Policy Assessment Tool & created weighted Scoring Grid using criteria[6]. Based on present day activity not developing/ future plans = 54%.	C+

Active Healthy Kids-Wales Authors and Contributors

The Active Healthy Kids-Wales (AHK-Wales) 2018 report card was produced by an Expert Group that consisted of 24 academics, postgraduate researchers, professionals and practitioners. Academics and researchers across **six** Universities in Wales and England collaborated with professionals and practitioners working in Welsh Government, Public Health Wales, Sustrans, Play Wales, Sport Wales and the National Dance Company Wales to co-produce the AHK-Wales 2018 report card.

Expert Group Members

Project Leads: 1. **Professor Gareth Stratton (GS)** 2. **Dr Lowri Cerys Edwards (LE)**	**Swansea University**
Research Lead: 3. **Richard Tyler (RT)**	Swansea University
Collaborators: 4. **Professor Sarah Nicholls (SN)** 5. **Dr Maggie C Miller (MCM)**	Swansea University
6. **Dr Nalda Wainwright (NW)** 7. **Dylan Blain (DB)**	University of Wales Trinity Saint David
8. **Dr Anna Bryant (AB)** 9. **Dr Anwen Jones (AJ)**	Cardiff Metropolitan University
10. **Dr Kelly Morgan (KM)** 11. **Dr Graham Moore (GM)**	Cardiff University and DECIPHer
12. **Dr Simon Williams (SW)**	University of Wales Trinity Saint David UK Association for the Study of Obesity
13. **Dr Cain Clark (CC)**	Hartpury College and University Centre
14. **Neil Canham (NC)**	Sustrans
15. **Marianne Mannello (MM)**	Play Wales
16. **Malcolm Ward (MW)** 17. **Karen Thompson (KT)**	Public Health Wales
18. **Ceri Greenall (CG)** 19. **Chris Roberts (CR)**	Welsh Government
20. **Julie Hobday (JH)**	National Dance Company Wales
21. **Lauren Carter-Davies (LCD)** 22. **Tim Evans (TE)**	Sport Wales
23. **Emily Marchant (EM)** 24. **Michael Sheldrick (MS)**	Swansea University (PhD students)

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The AHK-Wales Expert Group is seeking funding from partners and stakeholders to develop the Active Healthy Kids-Wales 2020 Report Card.

Access to the AHK-Wales Report Card
Available on the Active Healthy Kids Wales website:

www.activehealthykidswales.com

Referencing the AHK-Wales Report Card
Stratton G, Edwards L, Tyler R, Blain D, Bryant A, et al. (2018). Active Healthy Kids Wales 2018 Report Card.

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Future Report Cards
The Active Healthy Kids Wales 2018 Report Card is the third Active Healthy Kids Wales (AHK-Wales) report card following the inaugural and second report card published in 2014 and 2016 respectively[7,8].

The Active Healthy Kids Wales is part of the Active Healthy Kids Global Alliance 3.0 that will release report cards from 49 countries across 6 continents on 27th November 2018 in Adelaide, Australia.

The target date for the publication of the next Active Healthy Kids Wales Report Card is in 2020.

Aims

The Active Healthy Kids Wales 2018 Report Card aimed to:

1. Assess the 'State of the Nation' in relation to the levels of physical activity and sedentary behaviour.
2. Track trends in physical activity and sedentary behaviour.
3. Present an international context for physical activity and sedentary behaviour.
4. Inform policy, strategy, services and professional practice in physical activity and sedentary behaviour.
5. Identify critical gaps in knowledge related to children's physical activity and sedentary behaviour.
6. Provide evidence for advocates of physical activity and health related behaviours.

Background and Context

As the AHK-Wales Expert Group of academics, educators and allied professionals, we are concerned about the health of children in Wales. The AHK-Wales Expert Group aims to use data on physical activity to advocate for children's right to play, engage with sport and physical activity, learn and achieve, and be active and healthy. The Expert Group are motivated to promote healthy active behaviour and physical literacy in children. Our mission is to produce AHK-Wales Report Cards that provide a clear evidence base on 11 quality indicators related to physical activity that should be used to advocate and influence local, regional and national policies and investments in physical activity for children and young people.

In support of the aims of AHK-Wales, our rationale is that Wales has the highest prevalence of overweight children in the UK, whilst levels of sedentary behaviour, and physical activity and fitness are amongst the worst globally[9]. Conversely, Wales is a policy pioneer in children's play[10], it has an Active Travel Act (2013)[11] and Well-being of Future Generations Act (2015)[12] on its government statute and prioritises physical literacy as a key part of a child's development[13].

The AHK-Wales 2018 report card summarises the country's progress and position on children's health related physical activity. The AHK-Wales is part of the AHK Global Alliance 3.0 that will release report cards from 49 countries across 6 continents on 27th November in Adelaide, Australia.

Stages of Work

This is the third Active Healthy Kids Wales (AHK-Wales) report card following the inaugural and second report card published in 2014 and 2016 respectively[7,8]. Swansea University coordinated the work, supported by a national network of academics and professionals from sport, play, transport, public health, sport and exercise science, and education sectors. These constituents formed the Expert Group.

The Expert Group consisted of 24 academics and professionals from universities and the public sector in Wales. Professionals were invited to become part of the AHK-Wales Expert Group via e-mail in December 2017. The Expert Group consisted of researchers across five Universities in Wales and one university in England, professionals working in the Welsh Government, Public Health Wales, Sustrans, Play Wales, Sport Wales and practitioners to co-produce the AHK-Wales 2018 report card

Depending on their expertise, eleven team leaders were assigned to specific indicators: Overall Physical Activity (DB); Organised Sports Participation (RT); Active Play (MM); Active Transport (NC); Sedentary Behaviours (KM); Physical Fitness (SW & KT); Family and Peers (LE); School (AB); Community and Environment (MCM); Government (MW); Physical Literacy (NW & LE).

The group met once a month for four months, with meetings lasting about two hours. Over the four meetings, AHK-Wales team leaders presented findings for the 11 indicators for the whole group. Discussions followed each presentation and consensus was decided on each grade. The Expert Group was co-ordinated by two project leaders and one postgraduate researcher. The co-project leader secured funding for the project and outlined the programme of work (GS). The other co-project leader (LE) and the research lead (RT) were responsible for arranging meetings, sourcing data, contacting team leaders and producing Report Card materials.

Eleven indicators were assessed in total; an additional indicator (physical fitness) to the 10 included in the AHK Wales 2016 Report Card. Physical fitness was added to be consistent with other countries.

AHK-Wales 2018 Expert Group meeting outcomes are summarised in Figure 1.

Meeting 1: 31st January 2018

1.1 Appointed P/T Researcher – Richard Tyler
1.2 Reviewed the AHK-Wales 2018 methodology
1.3 Sourced available data to undertake the analysis
1.4 Debate on indictors 'obesity', 'physical fitness' and 'physical literacy'
1.5 Allocated quality indicator roles to each member and indicator leaders
1.6 Timelines set for groups to report back on each indicator
1.7 Future meeting dates shared and acknowledged funders (The Waterloo Foundation)

Meeting 2: 28th February 2018

2.1 Interim grade presented for 'Government' (MW)
2.2 Interim grade presented for 'Physical Fitness' (RT)
2.3 Interim grade presented for 'Overall Physical Activity' (DB)
2.4 Interim grade presented for 'Organised Sport Participation' (RT)
2.5 Organised the indicators that will be presented in next meeting on March 28th
2.6 Consulted with 'Geoshepherds' – website domain http://activehealthykidswales.com/

Meeting 3: 28th March 2018

3.1 Complete grade presented for 'School' (AB)
3.2 Complete grade presented for 'Physical Literacy' (LE & NW)
3.3 Complete grade presented for 'Community and Environment' (MM & MCM)
3.4 Interim grade presented for 'Active Transport' (NC)
3.5 Interim grade presented for 'Sedentary Behaviour' (RT in lieu of KM)
3.6 Organised the indicators that will be presented in next meeting on April 25th

Meeting 4: 25th April 2018

4.1 Complete grade presented for 'Government' (MW)
4.2 Complete grade presented for 'Active Play' (MM)
4.3 Complete grade presented for 'Family & Peers' (LE)
4.4 Complete grade presented for 'Active Transport' (LE in lieu of NC)
4.5 Complete grade presented for 'Overall Physical Activity' (DB)
4.6 Complete grade presented for 'Sedentary Behaviours' (KM)
4.7 Complete grade presented for 'Organised Sport Participation' (RT)
4.8 Complete grade presented for 'Physical Fitness' (RT & SW)
4.9 Complete grade presented for 'Community & Environment' (MCM)
4.10 Overall report card complete

Meeting 5: 30th May 2018

5.1 Deciding on an AHK-Wales 2018 theme
5.2 Media messages discussed and decided
5.3 Formation of a 'Active Healthy Kids Wales' Group meeting 2-3 times per year

Figure 1. AHK-Wales 2018 Expert Group Meetings Outcomes.

GIG CYMRU NHS WALES | Iechyd Cyhoeddus Cymru Public Health Wales | Cardiff Metropolitan University | Prifysgol Metropolitan Caerdydd | CARDIFF UNIVERSITY PRIFYSGOL CAERDYDD | thewaterloofoundation | sportwales chwaraeoncymru | National Dance Company Wales Cwmni Dawns Cymru | HARTPURY | Llywodraeth Cymru Welsh Government | Prifysgol Cymru Y Drindod Dewi Sant University of Wales Trinity Saint David | Prifysgol Abertawe Swansea University | play wales chwarae cymru | CIPHer | sustrans | NCPHWR

Methodology

The AHK-Wales 2018 Expert Group analysed results to assign grades using the "best possible evidence" from nationally representative data, for example, the National Survey for Wales[2] and Health Behaviour in School-Aged Children[1]. This approach is congruent with the National Institute of Health and Care Excellence (NICE) methodology[14] and past AHK-Wales report cards[7,8].

Following the AHK Global Alliance grading system[15], the Expert Group assigned an individual grade to each of the 11 indicators. The grading system used was developed by the Canadian group and is adopted by all countries participating in the AHK Global Alliance. The grades range from A+ where 94-100% of children are meeting the criteria, to F where 0-19 % meet the recommended threshold. Inconclusive (INC) indicated that data were inadequate or not available (see Table 1).

Table 1. Active Healthy Kids Global Alliance grading system.

Grade	Descriptor	Prevalence
A+		94 - 100 %
A	Wales is succeeding with most children and adolescents	87 - 93 %
A-		80 - 86 %
B+		74 - 79 %
B	Wales is succeeding with well over half of children and adolescents	67 - 73 %
B-		60 - 66 %
C+		54 - 59 %
C	Wales is succeeding with about half of children and adolescents	47 - 53 %
C-		40 - 46 %
D+		34 - 39 %
D	Wales is succeeding with under half of children and adolescents	27 - 33 %
D-		20 - 26 %
F		< 20 %
Inc.	Incomplete grade - data not sufficient or adequate	N/A

This report is based upon the best available evidence and recognised that most of the available data in Wales were susceptible to bias (i.e. self-reported data as oppose to objective methods). However, this bias is evident around the globe as self-reported data is cost-effective and accessible to larger populations. Further, the AHK-Wales 2018 Expert Group have included recommendations on the evidence required for future AHK-Wales Report Cards.

Process used to assign grades

The process that was used to assign the grades for the health indicators consisted of:

1. The best available evidence for each quality indicator. This resulted in the use of quantitative survey data for 10 indicators, namely the Health Behaviour in School-Aged Children survey (2017/18)[1], National Survey for Wales (2016/17)[2], Play Sufficiency Assessment Surveys[3]. The Health-Enhancing Physical Activity (HEPA) Policy Audit Tool was utilised to grade Government indicator[6].
2. During meetings a rationale for using each survey data were discussed. In the first instance, surveys that were representative of children in Wales were selected. Where nationally representative data were not available, the best available survey data were used. In all cases surveys included a significant sample that enabled the Expert Group to assign a grade to a quality indicator.
3. For each quality indicator, data were considered against a recommendation or benchmark. For example, the recommended benchmark for the 'Overall Physical Activity Levels' indicator is that children should engage in 60 minutes of moderate to vigorous physical activity (MVPA) per day. These benchmarks were aligned with the AHK Global guidelines.
4. The rationale for using the data source was given and likely biases in the data recorded.
5. Subsequently major gaps in the data were noted and considerations given to limitations in the "best available evidence".
6. Finally, recommendations on how to improve the grade or improve measurement were provided.
7. Quality assurance and agreement on grades were achieved through a verification process. This process involved two members of the group agreeing on grade assignment for each quality indicator. During meetings, two members presented the grade to the Expert Group with discussions centred on survey methodology and data quality. Grades were then either confirmed or further evidence on methodology or information on data quality was sought for presentation at the subsequent meeting.

Results

The following sections provide an outline of each quality indicator and the criteria used to assign a grade including; recommendations or benchmark, data sources used to assign grades including trends, biases and gaps, and finally some suggestions on how to improve the grade in the future.

Physical Activity

Health Behaviours and Outcomes

Overall Physical Activity (D+)

18.4% of children and young people aged 11-16 years met the recommendation of at least 60 minutes of MVPA every day of the week; 16.8% children and young people aged 11-16 usually exercise in their free time every day of the week[1]. In another survey, 51% of 3-17 year olds were active for at least an hour seven days a week[2].

Recommendations or benchmarks:
The UK-wide Chief Medical Officers' guidelines for physical activity recommend that, to receive the health benefits from physical activity, all children and young people should engage in moderate to vigorous intensity physical activity (MVPA) for at least 60 minutes and up to several hours every day[16]. The Expert Group used "the percentage of children and young people who meet the recommended physical activity guidelines" as the benchmark to allocate the grade.

Main data sources considered:
National Survey for Wales (NSW) 2016/17[2], Health Behaviour of School-aged Children (HBSC) & School Health Research Network survey 2017/18[1].

Reasons for choice of data source used to assign the grade:
HBSC used a well-established methodology, asking young people aged 11-16 how many days they were physically active for a total of at least 60 minutes per day[1]. The NSW asked parents/guardians of children aged 3-17 to report the amount of time their child was active on each day in the previous seven days[2].

Likely biases in the Welsh data:
Both HBSC and the NSW used self-report methods, meaning physical activity data may be over (or under) reported. The Health Survey for England (2008) used accelerometers in a sub-sample and found that a significant number of children over estimated their levels of physical activity.

Are trend data available?
The HBSC survey presents data from 1997/98, 2001/02, 2005/06, 2009/10, 2013/14 & 2017/18. Due to the differences in method used in the to gather data, NSW results are not comparable to previous surveys (i.e., Welsh Health Survey, 2014).

Are inequality data available?
HBSC data: There were inequalities between boys and girls (23% and 14% respectively meeting the physical activity guidelines), and a decline in the proportion of young people reporting being active from 11 years of age to 16 years of age. Analysis of trends revealed limited change in PA levels since 2010. The proportion of White and BME children reporting being active was similar.

Major Gaps in the Welsh data:
There was limited data available for children of all ages, particularly during the early years (children under 5). The data available was entirely self-report. There continues to be no large-scale studies measuring the physical activity behaviours of young people objectively. The Chief Medical Officers' Report (2011) included physical activity recommendations for moderate, vigorous and strengthening exercise, current methods do not collect data from these categories[16].

How to improve the grade in the future:
The majority of young people in Wales need to increase their physical activity levels. This can be achieved through a range of behaviours including dance, sport, active transportation and active play. A significant effort needs to be made to address very low levels of physical activity in girls. Efforts should be made to address the decline in physical activity observed with age.

Organised Sport Participation (C+)

55% of children and young people aged 11-16 years take part in organised activities outside of school/outside of lessons[1].

Recommendations or benchmarks:
There are currently no specific recommendations for the amount sport and dance that children and young people should participate in. However, organised sport participation is one way to potentially increase overall physical activity levels in children and young people in Wales.

In the 2016 Report Card, the percentage of children 'hooked on sport' (in line with Sport Wales' Vision of 'Every Child Hooked on Sport for Life') was used by the Expert Group as the benchmark[8]. However, due to changes from a 2-year cycle to a 3-year cycle in the administration of the Sport Wales' School Sport Survey, up to date data on children and young people 'hooked on sport' was not available. Therefore, the Expert Group used the Global Alliance benchmark 'percentage of children and youth who participate in organised sport and/or physical activity programs' to allocate a grade to this indicator.

Main data sources considered:
School Health Research Network survey 2017/18[1].

Reasons for choice of data source used to assign the grade:
HBSC used a well-established methodology, asking young people aged 11-16 years old to report the organised activities they took part in, during their free time outside of school[1].

Likely biases in the Welsh data:
The HBSC used self-report methods. Although the survey reports on the different types of organised activities that children and young people take part in, the survey does not report the frequency of participation (i.e. how many times a week do they take part in sport).

Are trend data available?
The HBSC survey presents data from 1997/98, 2001/02, 2005/06, 2009/10, 2013/14 & 2017/18. However, this question was only introduced into the 2017/18 survey.

Are inequality data available?
There was a difference in the proportion of boys and girls attending organised activities (60% boys; 51% girls). There was also a difference in the proportion of children and young people across ethnicities[1].

Major Gaps in the Welsh data:
There is a lack of evidence on children of early years (under 5 years old). This needs to be addressed through systematic robust data collection methods. Further for the 2018 report card there is no up to date data available for children under 11 years of age. Current surveys regarding participation in sport/dance/physical activity promoting clubs in Wales do not capture the duration of the sessions that children and young people take part in.

How to improve the grade in the future:
An increase in participation in sport, dance and organised physical activities/adventures should be a priority in Wales. To encourage participation, there should be a focus on maintaining investment in sport programmes, managing competitive structures in an inclusive manner, including a wider range of dance programmes, and introducing alternative sports. In addition, efforts should be made to address the inequalities that exist between boys and girls and across ethnicities.

Active Play (C-)

41% of children aged 5-17 years reported playing out most days[3]. In another survey, 44% of 11-16 year olds exercised in their free time during their summer holidays[1].

Recommendations or benchmarks:
There is no specific recommendation for the duration of time spent in active play or the amount of time being active outdoors. However, active play contributes to overall physical activity. The Expert Group used the percentage of children and youth who engage in unstructured/unorganized active play for several hours a day, percentage of children and youth report being outdoors for several hours a day and percentage of children and youth using 'streets near home or school, park, playground not at school, playing fields not at school, and beach/sea for places of physical activity/play.

Main data sources considered:
Play Sufficiency Assessment Surveys 2016[3], Health Behaviour of School-aged Children (HBSC) & School Health Research Network survey 2017/18[1].

Reasons for choice of data source used to assign the grade:
Both surveys included items on play.

Likely biases in the Welsh data:
The data are collected using questionnaires and items record play behaviour not specifically "active play". Active outdoor play patterns are affected by seasonal bias.

Are trend data available?
The HBSC survey presents data from 1997/98, 2001/02, 2005/06, 2009/10, 2013/14 & 2017/18.

Are inequality data available?
Results of the HBSC survey reported differences between sexes with more boys compared to girls reporting that they exercised 'often' or 'all of the time' during the summer holidays (50% v 38% respectively)[1].

Major Gaps in the Welsh data:
The HBSC survey only collected data on children aged 11 to 16 years old[1]. The Play Sufficiency Assessment Survey only reported 13 of 22 local authorities in Wales[3]. Further, collecting data from children in unstructured play in ethically and logistically challenging.

How to improve the grade in the future:
Safer roads - The adoption of a 20 mph speed limit in all residential areas will have wide-reaching and positive effect. Local Authorities should engage with local communities and facilitate resident led street led play projects across Wales.

Making the most of community assets-school grounds for play - Schools, as a central resource for the local community, should be encouraged to consider the options to make their school grounds available for free play after school and at weekends.

School play time - Schools should consider the value to pupil well-being when making decisions on the planning and length of the school day including play times, lunch times and homework scheduling.

Active Transportation (D+)

44% primary school children and 33% secondary school pupils travel actively to school (walk with an adult, walk on their own or with other children, cycle)[2]. In another survey, 33.8% of children and young people aged 11-16 years walk/cycle to school; 36.1% children and young people walk/cycle from school[1].

Recommendations or benchmarks:
There are no recommendations for active transport (for example walking, cycling, skateboarding). For the purposes of this report card children should be encouraged to take active forms of transport wherever practically possible. These should include travel to and from school, walking to shops, travel to sport or dance activities, to meet friends, or during family activities. The Expert Group used the proportion of children and young people who use active transportation to get to school, as the benchmark for grading the Active Transportation indicator.

Main data sources considered:
National Survey for Wales 2016/17[2]; Travel to school: Health Behaviour of School-aged Children (HBSC) & School Health Research Network survey 2017/18[1]; Travel from school: HBSC survey 2017/18[1].

Reasons for choice of data source used to assign the grade:
All Surveys included self-report of children's and young people's travel to school.

Likely biases in the Welsh data:
Active travel patterns are affected by seasonal bias.

Are trend data available?
The HBSC survey presents data from 1997/98, 2001/02, 2005/06, 2009/10, 2013/14 & 2017/18. National Survey results are available for 2013/14, 2014/15, 2016/17 Observations of the best available data for the Active Transport indicator would suggest that there is a downward trend in the percentage of children are travelling actively to school.

Are inequality data available?
There are no inequalities in the data between sexes and ethnicities for active transport to and from school from the HBSC Survey.

Major Gaps in the Welsh data:
Surveys only provide national data on children's active transport to and from school. Transport behaviours across the age range and in various contexts and settings are more limited. Lack of data on transport to places such as, shops, parks, friends' or relatives' houses and sport facilities, which may provide additional chances for active transportation.

How to improve the grade in the future:
Active transportation is considered a cost-effective way to promote physical activity across the life course[17]. This should be promoted through active walking and cycling schemes and school travel plans[17]. Parents and carers should encourage children and adolescents to take active travel options. More research is needed on how children and young people travel to other places including shops, parks and friends' or relatives' houses.

Sedentary Behaviours (F)

80% of children/young people aged 11-16 years spend 2 or more hours sitting in their free time (e.g. watching TV, using a computer or mobile phone, travelling in a car or by bus, sitting and talking, eating and studying) on weekdays and 88% on the weekend[1]. In another survey, 81% of children had at least two hours screen of time (using electronic devices or watching television) on a weekday, and over 92% on a weekend day[2].

Recommendations or benchmarks:
The British Heart Foundation have summarised international recommendations from the USA, Australia and the UK[18]. The recommended time children and young people should spend sitting during leisure time should be less than 2 hours per day. The Expert Group used 'the percentage of children and young people who exceeded the recommended sedentary time guidelines (i.e. 2 or more hours)' to grade this indicator.

Main data sources considered:
: Health Behaviour of School-aged Children (HBSC) & School Health Research Network survey 2017/18[1], National Survey for Wales (NSW) 2016/17[2].

Reasons for choice of data source used to assign the grade:
HBSC used a well-established methodology, asking young people aged 11-16 years old to report on how much time spent sitting they had undertaken outside of school hours, for weekdays and weekends[1]. The NSW asked parents/guardians of children aged 3-17 to report how many hours their child spends on electronic devices or watching television, on an average weekday, and on a weekend day[2].

Likely biases in the Welsh data:
Both the HBSC and NSW use self-report methods. There can be information bias in self-reported surveys as there may be an element of subjectivity in responses given, which often leads to an over-reporting of healthy behaviours and an underreporting of less healthy ones.

Are trend data available?
The HBSC survey presents data from 1997/98, 2001/02, 2005/06, 2009/10, 2013/14 & 2017/18. The NSW has replaced the Welsh Health Survey as a source of data on health-related lifestyle among children. Results from the two surveys are not comparable due to the change in survey methodology.

Are inequality data available?
From the HBSC survey, the proportions under-achieving the recommendations between girls and boys were different (82% boys and 80% girls) on weekdays, but no difference for weekend days. Higher proportions were observed among older age groups (aged 14 years and above)[1]. From the NSW survey, the proportions between boys and girls were different (83% boys and 79% girls) on weekdays, but no difference for weekend days[2]. Screen time increased with age, but fluctuated across levels of deprivation[2].

Major Gaps in the Welsh data:
There are no large-scale studies in which sedentary behaviour has been measured objectively, for example, with the use of accelerometers, in Wales. There is limited research available for children under age 11 years. This needs to be addressed through systematic robust data collection methods.

How to improve the grade in the future:
A significant effort needs to be made to address the very high levels of sedentary behaviour among young people in Wales. To inform the design of effective strategies, there is a need for high-quality evidence using objective measures, as well as, information on the domain (e.g. school time, leisure time etc.), type (e.g. sitting using the phone) and context of sedentary behaviours.

Physical Fitness (Inc.)

No national data covering all components of physical fitness and full age range therefore inconclusive.

Recommendations or benchmarks:
In accordance with the Active Healthy Kids Global Alliance, the agreed benchmarks for physical fitness were:

- Percentage of children and youth who meet the interim international criterion-referenced standards for cardiorespiratory fitness (35 and 42 mL/kg/min in girls and boys respectively).
- Percentage of children and youth who met the World Health Organizations' BMI-for-age references standards.
- Percentage of children and youth who meet criterion-references standards for muscular strength.
- Percentage of children and youth who meet criterion-referenced standards for muscular endurance.
- Percentage of children and youth who meet criterion-referenced standards for flexibility.

As physical fitness is comprised of multiple components it was agreed that cardiorespiratory fitness would be used as the primary indicator for grade allocation and the other components would be described within the narrative for the physical fitness indicator. This approach has been used previously in the 2016 United States Report Card.

Main data sources considered:
The Active Healthy Kids (Wales) Research Group were unable to identify any data for cardiorespiratory fitness, muscular strength, muscular endurance or flexibility that are nationally representative. The Swanlinx project which is delivered through a partnership between Swansea University and the City and County of Swansea Council, provides the largest dataset on children's physical fitness but this is currently limited to the Swansea geographical area[19].

There are nationally representative data from the Child Measurement Programme for Wales that provide valid prevalence estimates of overweight and obesity, but these data are limited to children aged 4 and 5 years[20].

Major Gaps in the Welsh data:
Based upon the limited availability of nationally representative data that spans the child and adolescent age range, an INCONCLUSIVE grade was agreed for the physical fitness indicator.

How to improve the grade in the future:
It is imperative that national health surveillance includes the objective measurement of physical fitness to enable the monitoring and evaluation of the effectiveness of public health interventions. The Swanlinx project exemplifies the systematic approach to the large-scale collection of physical fitness data that is required and should be supported.

Physical Literacy (Inc.)

Physical Literacy sub-indicators: Physical competence – Dragon Challenge 2017[4] = D+; Motivation – No Data = INC; Confidence – No Data = INC; Knowledge and understanding – No Data = INC. Overall Physical Literacy is therefore inconclusive.

Recommendation or benchmark:
Sport Wales adopts Whitehead's definition of physical literacy, namely: "the motivation, confidence, physical competence, knowledge and understanding to value and take responsibility for engagement in physical activities for life" [21]. Physical literacy is considered a 'holistic' concept and acknowledges the physical, affective and cognitive domains as equally important[5]. In collaboration with Swansea University, Glyndwr University and Liverpool John Moores University, Sport Wales have designed a national measure of Physical Competence for children aged 8-14 years old (Dragon Challenge)[4].

Main data sources considered:
Physical Competence: Dragon Challenge; no sources for affective or cognitive domains.

Reasons for choice of data source used to assign grade:
"Every child hooked on sport for life" is a key mission for Sport Wales. Sport Wales have focused much attention on physical literacy as an outcome of successful programme delivery, and have invested into related programmes such as the Physical Literacy Programme for Schools (PLPS) and projects such as Dragon Multi-Skills and Sport and 5x60 programmes[13].

Likely biases in the Welsh data:
Given that physical literacy is a holistic concept, solely measuring the 'physical domain' is not a measure of physical literacy.

Are trend data available?
Trend data for the Dragon Challenge are available.

Are inequality data available?
The Dragon Challenge physical competence data shows inequalities between genders[4].

Major gaps in the Welsh data:
There were no available data for the affective (Motivation and Confidence) and cognitive (Knowledge and Understanding) domains[5].

How to improve the grade in future:
Current research does not account for the **holistic** nature of the concept[5]. That is, research tends to separate the domains and does not consider interactions between the domains. As such, there is a need to be more creative with developing approaches to measure/assess physical literacy beyond the constructs of physical proficiencies, from a more holistic perspective[22]. Further data collection is needed across Wales to allow the Research Work Group to assign a grade to this indicator in future Report Cards.

Settings and Influences on Physical Activity and Health

Family and Peers (D)

59% of parents were active for 150 minutes+ a week, 8% of parents take part in vigorous activity for >75 minutes/ week, 31% of parents take their child to the playground and 20% of parents take part in informal games such as playing Frisbee[2].

Recommendations or benchmarks:
There are no specific recommendations for parental involvement although studies have shown a relationship between parent and childhood activity[23]. Parents should however be active for 150 minutes per week[16]. The benchmarks used by the Research Work Group for this indicator were: (1) Percentage of parents who meet the Global Recommendations on Physical Activity for Health, and (2) Percentage of family members (e.g., parents, guardians) who are physically active with their kids.

Main data sources considered:
National Survey for Wales (NSW) 2016/17[2].

Reasons for choice of data source used to assign the grade:
The National Survey for Wales collected data on over 10,000 randomly-selected people aged 16 and over across Wale and provided data on family involvement in sport.

Likely biases in the Welsh data:
All data were self-reported and may over-report and under-report health behaviours.

Are trend data available?
There is no trend data available for this indicator.

Are inequality data available?
Data from Family and Peers was derived from only one data source, The National Survey for Wales.

Major Gaps in the Welsh data:
Data from the National Survey for Wales only reported parental influence. As such, there was no data for peers' influence.

How to improve the grade in the future:
Parents are encouraged to regularly plan for and engage in physical activity or sports with their children, particularly in the evenings, weekends and holidays. Parents should encourage active transport and allow their children to explore physically active challenges within their environment. Future research needs to focus on the influence of parents on various amounts and types of physical activity and how these change with age. The data sourced from the National Survey for Wales solely focused on parental physical activity. There was no available data on peers' influence for the 2018 report card. A significant effort needs to be made to address the lack of data available on peers' influence.

School (Inc.)

No updated data available for 'School' since AHK-Wales 2016, therefore School is inconclusive.

Recommendations or benchmarks:
Since children and young people spend a large amount of their day at school, the school environment represents many opportunities for the promotion and facilitation of physical activity (e.g. PE, extracurricular sports). In Wales, it is recommended that schools provide 120 minutes (2 hours) of physical education on average per week[16]. The benchmarks for this indicator relate to physical activity opportunities at school and during physical education lessons. Bernstein's (1977) analytical framework depicts 'high quality' provision as the integration of curriculum, pedagogy and assessment[24]. Children would exhibit the following 10 outcomes if PE and School Sport provision was deemed high quality: commitment, enjoyment, confidence, knowledge and understanding of healthy and active lifestyle, take part in a range of activities, a desire to improve, stamina, suppleness and strength[25]. Consideration for quality PE and School Sport is imperative to this indicator as there are clear links between high quality PE and School Sport with: i) new curriculum health and well-being area of learning and experience[26]; and, ii) physical literacy[27].

Main data sources considered:
With no updated and available data since the 2016 report card, the Research Work Group assigned an inconclusive grade to the School indicator.

Reasons for choice of data source used to assign the grade:
The available data for the 2016 report card reported the quantity of data (e.g. time allocated to PE). However, this data did not focus on the quality of PE and School Sport provision offered. In 2018, there was no updated data sources.

Likely biases in the Welsh data:
N/A

Are trend data available?
No trend data available.

Are inequality data available?
N/A

Major Gaps in the Welsh data:
There is no available data on School in Wales in relation to: i) quality of Physical Education and School Sport provision; and ii) amount of time pupils spend engaged in purposeful physical activity in School.

How to improve the grade in the future:
Schools should maximise opportunities for pupils to move more and sit less throughout the school day. Given the upcoming curriculum changes in Wales that places an emphasis on health and well-being, nationally representative research on School is required[26]. Previous research in this area has focused on the amount of PE and School Sport provision offered to children and young people. Future research should investigate the quality of PE and School Sport provision that is nationally representative. Further, research should identify factors that influence participation in physical activity at school. Schools should consider the value to pupil well-being when making decisions on the planning and length of the school day including play times, lunch times and homework scheduling. Schools should provide adequate facilities, equipment and supervision during the lunch-time. Further, school landscape design and playground design which supports play should feature in new school design from the outset.

Community & Environment (Inc.)

No updated data available for 'Community and Environment' since AHK-Wales 2016 Report Card, therefore Community and Environment is inconclusive.

Recommendations or benchmarks:
The Community and the Environment indicator refers to perceived safety, access, and availability of facilities and spaces that provide opportunities for physical activity in children and young people. There is no specific recommendation, however research has reported a relationship between the built environment and physical activity[28]. The benchmarks used to grade this indicator were, 'the percentage of children/parents satisfied with the play facilities available in their local area', as well as, 'the percentage of children/parents living in a safe neighbourhood where they can be physically active'.

For the 2016 Report Cards, the Expert Group used the percentage of children/parents satisfied with the play facilities available in their local area to assign a grade to this indicator[8]. Feedback from the largest consultation of its kind in Wales was also used to assist with the grading process. However, for the 2018 Report Card, the data available around these benchmarks were limited.

Main data sources considered:
National Survey for Wales (NSW) 2016/17[2].

Reasons for choice of data source used to assign the grade:
The NSW (2016/17) conducted 10,493 face-to-face interviews with one adult (aged 16+) in each household across Wales. Data were available on adults' thoughts about their local area, but this was not specifically geared towards physical activity.

Likely biases in the Welsh data:
The NSW used self-report methods. There can be information bias in self-reported surveys as there may be an element of subjectivity in responses given, which often leads to an over-reporting of healthy behaviours and an underreporting of less healthy ones.

Are trend data available?
The NSW has replaced the Welsh Health Survey as a source of data on health-related lifestyle among children. Results from the two surveys are not comparable due to the change in survey methodology.

Major Gaps in the Welsh data:
Due to questions around this indicator not being included in the NSW 2016/17 round of interviews, no new data were available. Therefore, the Expert Group decided an inconclusive grade should be assigned.

How to improve the grade in the future:
Little to no up-to-date evidence was available for this indicator. Further data collection, research, and interventions are needed to reduce the barriers towards physical activity and play. Improvements in perceived safety, access, and facilities may produce reductions in sedentary time and improvements in physical activity, outdoor and active play.

Government (C+)

21 Policy documents assessed - Health; Sport; Education; Environment; Transport; Urban Design/ Planning; Other (Play, Sustainable Development; Cross-cutting) Used HEPA Policy Assessment Tool & created weighted Scoring Grid using criteria. Based on present day activity not developing/ future plans = 54%

Recommendations or benchmarks:

Unlike the other indicators there are no purely objective measures that can be used to inform the report card. However, the Expert Group utilised the World Health Organisation (WHO) Europe Health-enhancing physical activity (HEPA) policy audit tool (PAT)[6]. This tool provided an internationally recognised framework that offers both credibility and potential continuity if used in the future. In interpreting this indicator, the Expert Group included current and 'active' national policies, strategies, action plans, legislation and other advisory and technical documents that have a direct bearing on children's physical activity. Twenty-one national documents were identified (see Table 2).

Table 2. Twenty-one national documents under the Government indicator.

Sector	Title of Document	Type*
Health	Fairer Health Outcomes For All: Reducing Inequities in Health Strategic Action Plan (2011)	S
	Start Active, Stay Active: A report on physical activity for health from the four home countries' Chief Medical Officers (2011)	G
	Public Health (Wales) Act 2017	L
	Our Healthy Future: Technical working paper	O
Health & Sport	Getting Wales Moving	O
Sport	Climbing Higher (2006)	S
	Creating an Active Wales (2009)	AP
	Community Sport Strategy 2012 – 2020	S
Education	Physical Education in the National Curriculum for Wales (2008)	G
	Physical Literacy – an all-Wales approach to increasing levels of physical activity for children and young people (2013)	O
Transport	Active Travel (Wales) Act 2015	L
	An Active Travel Action Plan for Wales (2013)	AP
Environment Urban Design & Planning	Natural Resources Policy Statement, 2015 **(S)**	S
	Planning (Wales) Act 2015	L
	Planning Policy Wales (2016)	S
Cross-cutting	Prosperity for All (2017)	S
Play	Welsh Assembly Government Play Policy (2002)	S
	Play in Wales: Play Policy Implementation Plan (2006)	AP
	Children & Families (Wales) Measure (2010)	L
	Wales: A Play Friendly Country (2014)	G
Sustainable Development	The Well-being of Future Generations (Wales) Act 2015	L

*Key: S – Strategy/ Policy; AP – Action Plan; G – Guidance; L – Legislation; O – Other

Deciding on a Grade:

Whilst the HEPA PAT tool was very helpful in analysing this indicator it was still a largely subjective process, and so a simple scoring system was developed using the 'elements' described in the tool. Each element was ascribed a percentage score 'weighted' to reflect the element's perceived importance in translating the policy instruments effectively. After initial 'weighting' by the indicator leads, the final weighting was considered, refined and agreed by the whole Expert Group.

The final scoring matrix was as follows:

- Number and breadth of relevant policies - 10% (5% No. & 5% Breadth)
- Identified supporting actions - 20%
- Identified accountable organisation – 25%
- Identifiable reporting structures - 15%
- Identified funding and resources - 20% (5% identified national programmes & 15% funding)
- Monitoring & Evaluation Plan – 10%

Applying this matrix led to an overall grade of 54% that translates to a C+. Since the 2016 AHK-Wales report card, the Government grade has decreased slightly from B- to C+. One explanation for this change may be the use of the HEPA PAT tool in 2018 which made the process less subjective.

Considerations:

Though still in existence and 'active', some of the policies are now quite old. This is important to consider because some of the original and intended activities, funding mechanisms and delivery systems will have changed over time, particularly during this period that incorporates the global economic downturn that resulted in significant organisational, structural and systemic changes. It should also be noted that a new curriculum is being developed for settings and schools in Wales based on Donaldson's (2015) curriculum review[26].

How to improve the grade in the future:

Wales requires a clearly articulated ambition; this ambition requires an unbroken chain of policy-strategy-delivery-review. Regularly updating policies on physical activity and sedentary behaviour for health promotion, informed by an evidence base, would clearly support approaches to physical activity and sedentary behaviour management in children and young people in Wales in the future. Data collection approaches that provide robust data to assess all quality indicators included in this Report Card are required. The current Report Card should be used to influence and inform policies and strategies, support structures, investments and opportunities that help promote sound health, growth and development in the nation's children and young people.

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