Long Form Report Card 2016

This document explains which data sources were used to derive the report card grades and why they were used, which sources of data sources were considered for the report card but were *not* used for grading and why they were not used. Gaps in Scottish data are also explained and links to all data sources are provided. To access the Active Healthy Kids Scotland Report Card 2016 and the Long-form Report Card 2013 (which provides more detail on the methods used for deriving report card grades) see www.activehealthykidsscotland.co.uk

Indicator 1: Sedentary Behaviour

Methods of measurement: Most sources of data used self/parent report of recreational screen time (i.e. TV viewing, gaming and other recreational screen time). One source used objectively measured sedentary time via accelerometers. A systematic review by Lubans et al (see Active Healthy Kids Scotland Report Card 2013, longform, www.activehealthykidsscotland.co.uk) concluded that most self –report and parent-reported methods of measuring sedentary behaviour, including screen time, probably have reasonable reliability but are of unknown validity, and that self- and parent-proxy reports may underestimate recreational screen time.

Gaps in Scottish data: Lack of data for primary school aged children; the Scottish Health Survey 2014 reports screen time for children aged 2-15 years but not by age group. Lack of data on screen time for preschool children; Growing Up in Scotland 2013 reports TV viewing only (not gaming etc) among 3 year olds. Lack of data on total sedentary time across childhood and adolescence, one study (see Millennium Cohort Study below) reports objectively measured sedentary time in 7 to 8 year olds.

1.1. Health Behaviour in School-Aged Children (HBSC) 2014

Publication: HBSC 2014 Survey in Scotland National Report (published in 2015)
http://www.cahru.org/content/03-publications/04-reports/hbsc_nr14_interactive_final.pdf

Method of measurement: Self-reported screen time in young people aged 11, 13 and 15 years

Data used for grading because it meets the three criteria of being recent, representative, no evidence of large bias.

Summary: 64% of young people watched TV for ≥2h/day on week days (68% boys vs 60% girls), higher at the weekend (79%). 65% of boys and 46% of girls played computer games for ≥2h/day on week days, higher at the weekend (78% of boys and 57% of girls). 66% of girls and 60% of boys used computers for purposes other than games for ≥2h/day on week days (higher at weekend).

Further information (from the HBSC 2014 Survey in Scotland National Report)
TV viewing by age and gender

- 11 yrs = 57% watched TV for ≥2h/day on weekdays (62% boys, 51 % girls).
- 13 yrs = 68% watched TV for ≥2h/day on weekdays (71% boys, 65% girls).
- 15 yrs = 68% watched TV for ≥2h/day on weekdays (72% boys, 64% girls)
- TV viewing is higher at weekends vs week days. TV viewing at the weekend is lower among 11-year olds than among the older age groups.

Trends: The percentage of young people watching TV for ≥2h/day on week days fell from 75% in 2002 to 64% in 2014 (75% to 68% in boys, 74% to 60% in girls). The percentage of young people watching TV for ≥2h/day on weekends has increased slightly from 75% in 2006 to 79% in 2014. *Note: other forms of recreational screen time have become popular over this time period, see below.*

Playing computer games by age and gender

- 11 yrs = 61% boys and 42% girls played computer games for ≥2h/day on week days, higher at weekends (74% boys and 55% girls)
- 13 yrs = 70% boys and 52% girls played computer games for ≥2h/day on week days, higher at weekends (81% boys, 65% girls)
- 15 yrs = 63% boys and 44% girls played computer games for ≥2h/day on week days, higher at weekends (79% boys, 52% girls)
- During the school week, boys are more likely to play computer games for ≥2h/day compared to girls, observed within each age group. The percentage of young people playing computer games for ≥2h/day is greater at weekends than week days, observed among all three age groups.

Trends: From 2010 to 2014, the percentage of girls playing computer games for ≥2h/day has increased on week days (46% in 2014 vs 29% in 2010) and weekends (57% in 2014 vs 37% in 2010). No change was seen in the percentage of boys playing computer games during week days and weekends.

Additional screen time (i.e. using computers for purposes other than games e.g. chatting online, internet, emailing, homework etc) by age and gender

- 11 yrs = 44% boys and 45% girls used computers (not games) for ≥2h/day on week days, higher at weekends (52% boys, 55% girls), no gender difference.
- 13yrs = 62% boys and 72% girls used computers (not games) for ≥2h/day on week days, higher in girls and at weekends (70% boys, 79% girls),
- 15 yrs = 74% boys and 83% girls used computers (not games) for ≥2h/day on week days, higher in girls and at weekends (82% boys, 87% girls).

Trends: The percentage of young people using computers for purposes other than games has increased between 2010 and 2014 on week days (51% in 2010 to 63% in 2014) and weekends (57% in 2010 to 71% in 2014). The percentage playing computer games is similar across age groups, however the prevalence of non-gaming computer use increases with age (partly due to higher schoolwork demand at secondary school).

1.2 Scottish Health Survey (SHeS) 2014

Publication: Obesity indicators: Monitoring progress for the prevention of obesity route map report (published Nov 2015) http://www.gov.scot/Publications/2015/11/2951/12 ***(Note: data not provided in the main SHeS report)***

Method of measurement: Self/parent-reported time spent sitting watching TV or another type of screen such as a computer, games console or handheld gaming device (excluding time at nursery or school) in 2-15 year olds.

Data not used for grading as compliance with screen time recommendations (i.e. < 2 hours per day) not given (instead data reported as % exceeding 4 hours/day) and data not reported by age group (instead data combined for children aged 2 to 15 years). Data does support the view that screen time is excessive.

1.3 Growing Up in Scotland (GUS) 2013

Publication: Growing Up in Scotland: The circumstances and experiences of 3 year old children living in Scotland in 2007/08 and 2013 (published Oct 2015) http://www.gov.scot/Resource/0048/00486729.pdf

Data became available after previous report card but are provided for children aged 3 years in 2007/08 (i.e. Birth Cohort 1, BC1) and children aged 3 years in 2013 (i.e. Birth Cohort 2, BC2).

Method of measurement: parent proxy report of child's TV viewing (including watching a film/DVD on a computer or laptop but excluding any other type of 'screen time' such as playing games on console or computer).

Data not used for grading as reported TV viewing only (not gaming etc), but supports the view that screen time is typically excessive and socially patterned.

1.4 Millennium Cohort Study (MCS)

Publication: Griffiths et al. How active are our children? Findings from the Millennium Cohort Study. BMJ Open 2013;3:e002893 http://bmjopen.bmj.com/content/3/8/e002893.full

Method of measurement: Time spent sedentary measured using actigraph accelerometers in 761 Scottish children aged 7-8 years old in 2008/09

Data not used for grading as there are currently no recommendations for sedentary time, and because the data is not recent (i.e. Collected in 2008-2009) and is limited to 7 and 8 years olds.

Indicator 2: Overall Physical Activity (Moderate-to-vigorous intensity physical activity, MVPA)

Methods of measurement: Most sources of data used self/parent report of PA or MVPA. One source used accelerometers in 7-8 year old children in 2008-9 to measure time spent in MVPA and proportion meeting the PA guidelines.

Major gaps in Scottish data: No data on the proportion of preschool children meeting the PA guideline of ≥180mins/day of any intensity PA; the SHeS applies the school-age PA guideline (i.e. ≥60 mins/day of at least moderate intensity PA) to the pre-school population. Lack of data on compliance with the PA guidelines in children as the SHeS assumes that all reported activities were of at least moderate intensity, thus compliance levels in the SHeS are overestimated (see also Basterfield et al Arch Dis Child 2008; 93: 1054-1058 and see longform report card in 2013 www.activehealthykidsscotland.co.uk). The HBSC also uses self-reported measures of MVPA, but does measure intensity an has been validated (see longform report card from 2013 and more recent publication Hardie Murphy et al BMC Public Health 2015; 15: 1080, thus providing more realistic estimates of compliance. Lack of objectively measured MVPA across childhood and adolescence.

2.1 Health Behaviour in School-Aged Children (HBSC) 2014

Publication: HBSC 2014 Survey in Scotland National Report (published in 2015)
http://www.cahru.org/content/03-publications/04-reports/hbsc_nr14_interactive_final.pdf

Method of measurement: Self-reported MVPA using the PACE+ Adolescent Physical Activity Measure which has some evidence of validity relative to a criterion measure of physical activity (two supportive validation studies cited in Active Healthy Kids Scotland Report Card 2013 longform, plus an additional study published in 2015 noted above).

Data used for grading because it meets the three criteria of being recent, representative, unbiased.

Summary: 18% of young people met the MVPA guidelines (21% of boys and 15% of girls)

Further information (from the HBSC 2014 Survey in Scotland National Report)
Proportion meeting the PA guidelines by age and gender

- 11 yrs = 30% of boys and 21% of girls
- 13yrs = 19% of boys and 13% of girls
- 15yrs = 15% of boys and 11% of girls
- Boys more likely to meet the PA guidelines than girls at all three age groups. Proportion meeting the guidelines is higher in 11 year olds, with a marked decrease between ages 11 and 13, especially among boys.

Trends: The proportion of boys and girls meeting the PA guidelines has increased between 2010 and 2014 (from 11% to 15% among girls, 19% to 21% among boys) but the proportion of boys and girls meeting the physical activity guidelines in 2014 has not improved relative to that in 2002.

2.2 Scottish Health Survey (SHeS) 2014

Publication: The Scottish Health Survey 2014: Volume 1: Main Report (published Sept 2015) http://www.gov.scot/Publications/2015/09/6648 AND Further information (from The Scottish Health Survey 2014: Volume 1: Main Report and from supplementary web tables, not included in main report) http://www.gov.scot/Topics/Statistics/Browse/Health/scottish-health-survey/Publications/Supplementary2014

Method of measurement: Self/parent-reported measure of PA, used by Scottish government agencies to calculate compliance with the PA guidelines (≥60 minutes of PA of at least moderate intensity daily). However, SHeS does not collect information on intensity and assumes that all reported activities were of at least moderate intensity, thus compliance levels in the SHeS are overestimated. No supportive validation studies, only validation study to date (from 2008) found the method overestimates daily MVPA by 2 hours on average (see Active Healthy Kids Scotland Report Card 2013 longform).

Quote from the SHeS 2014 methodology Child physical activity questionnaire

'The questions on child physical activity are slightly less detailed than those for adults. **No information on intensity is collected** (with the exception of asking those aged 13-15 about their walking pace). The questions cover: □ Sports and exercise □ Active play □ Walking, and □ Housework or gardening (children aged 8 and over only). Since 2008, children at school have also been asked about any active things they have done as part of lessons (using the same format of questions as for all other activity types). Full details of all the information collected was provided in the 2012 report. **For the purposes of calculating physical activity levels, it was assumed that all reported activities were of at least moderate intensity'.**

Data not used for grading because the SHeS does not measure PA intensity and has massive bias when total volume of PA is treated as MVPA as noted above. In addition, data reports the percentage of 2-4 year olds meeting the ≥60 mins/dayMVPA guideline, which is not the correct PA guideline for 2-4 year olds (i.e. 180mins/day of any intensity PA). Supplementary web tables report that total PA (of any intensity) was 123.7 mins/day in 2-4 year olds (129.8mins/day for boys and 117.7mins/day for girls).

2.3 Millennium Cohort Study (MCS)

Publication: Griffiths et al. How active are our children? Findings from the Millennium Cohort Study. BMJ Open 2013;3:e002893 http://bmjopen.bmj.com/content/3/8/e002893.full

Method of measurement: Time spent in MVPA measured using Actigraph accelerometers in 761 Scottish children aged 7-8 years old in 2008/09

Data not used for grading because the data not recent (collected in 2008-2009) and 7 to 8 year olds only.

2.4 National Diet and Nutrition Survey (NDNS) for Scotland

Publication: National Diet and Nutrition Survey Rolling Programme (NDNS RP): Results from Years 1-4 (combined) for Scotland (2008/09-2011/12) published Sept 2014 http://www.foodstandards.gov.scot/national-diet-and-nutrition-survey-rolling-programme-results-years-1-4-combined-scotland-200809

Method of measurement: Total physical activity measured using Actigraph accelerometers in children aged 4-10 (collected over four years 2008/09-2011/12) and children aged 11-15 years (collected in years 2-4 2009/10-2011/12)

Data not used for grading because no MVPA data provided.

2.5. Growing Up in Scotland (GUS)

This survey has collected parent-reported time spent being physically active for Birth Cohort 1 (born 2004/05) when children were 8 years old (measured 2012/13, data available from GUS but has not been published) and for Birth Cohort 2 (born 2010/11) when children were 5 years old (measured in 2015, data not available).

Data not available for grading at present.

Indicator 3: Active Transportation to School

Methods of measurement: all sources of data used self/parent report of usual mode of travel to school; active travel was considered to be walking, cycling, and scooting/skateboarding.

Major gaps in Scottish data: Many sources of data available, however data focuses on commute to and from school, lack of data on other forms of commuting transportation.

Grading: all children and adolescents have to commute to nursery/school and so potential for active forms of commuting is assumed to be 100%.

3.1 Health Behaviour in School-Aged Children (HBSC) 2014

Publication: HBSC 2014 Survey in Scotland National Report (published in 2015)
http://www.cahru.org/content/03-publications/04-reports/hbsc_nr14_interactive_final.pdf

Method of measurement: Self-reported mode of travel to school in young people aged 11, 13 and 15 years

Data used for grading because it meets the three criteria of being recent, representative, probably fairly unbiased.

Summary: 46% usually walked to school (46% of boys and 46% girls) and 3% usually cycled (4% boys, 1% girls), total 49% for grading.

Active commuting to school by age:

- 11 years = 56% walked and 5% cycled
- 13 years = 40% walked and 1% cycled
- 15 years = 42% walked and 1% cycled
- Active commuting to school is more common among primary school children (i.e. 11 year olds) compared to secondary school children, however pupils aged 13 and 15 years are less likely than those aged 11 to have a journey of less than five minutes (46% of 11 year olds, 14% of 13 year olds, 10% of 15 year olds) but more likely to have a journey of over 15 minutes (13% of 11 year olds, 41% of 13 year olds, 47% of 15 year olds).

3.2 National Travel Survey 2011/2012

Publication: Transport Scotland report 'National Travel Survey 2011/2012: Scotland Results (published March 2014) http://www.transport.gov.scot/statistics/j314725-00.htm

Method of measurement: Mode of travel to school collected in 2011-2012 for 5-16 year olds (not clear if data were self or parent reported). *Note: National Travel Survey ceased to collect data for Scotland from 2013.*

Data used for grading because it meets the three criteria of being recent, representative, probably relatively unbiased.

Summary:

- Among children aged 5-16 years, 47% walked to school in 2011-2012 (43% in 2009/10 and 52% in 2002/2003)
- 2% cycled to school in 2011-2012 (13% in 2009/10 and 1% in 2003/2004)
- Average trip length was 1.5 miles in 5-10 year olds and 3.1 miles in 11-15 year olds (2.4 miles overall).

3.3 Hands Up Scotland Survey 2014

Publication: Travel to School in Scotland: Hands Up Scotland Survey: Results for 2014 (published May 2015)
http://www.sustrans.org.uk/scotland/what-we-do/schools-and-universities/hands-scotland *Note: 2015 data to be published in May 2016*

Method of measurement: Self-reported mode of travel to school in primary and secondary school aged children, with assistance provided, if needed, for nursery aged children**.**

Data used for grading because it meets the three criteria of being recent, representative, probably relatively unbiased.

Summary: 50% of primary and secondary school pupils commuted actively (44% by walking, 3% by cycling and 3% by scooting/skateboard). Also 8% park and stride to school (i.e. they are driven part of the way to school and walk the rest). 49% of nursery school pupils commuted actively (41% by walking, 4% by cycling, 4% by scooter/skateboard), a further 4% by park and stride.

Active travel by school age

- 55% of primary school pupils travel to school actively compared to 44% of secondary school pupils.
- 46% of primary school pupils walk compared to 43% of secondary school pupils
- 5% of primary school pupils cycle compared to 1% of secondary school pupils
- 4% of primary school pupils scooter/skate compared to 0.2% of secondary school pupils
- 10% of primary school pupils park and stride compared to 4% of secondary school pupils

Trends: Active travel to school (both primary & secondary combined) remained consistent from 2009 to 2012 (between 49% and 50%), slightly higher in 2008 (52%). Level of walking decreased from 48% in 2008 to 44% in 2014. Percentage of pupils who normally scoot or skate to school has increased every year (except 2009) from 0.7% (2008) to 2.8% (2014). No clear trend in cycling levels, % of pupils normally cycling to school remained between 2.8% and 3.0% from 2008 to 2011, slight decrease in 2009 (2.3%) and higher in 2013 (3.5%) and 2014 (3.4%). Park and stride has shown a small consistent increase each year from 2008 (6.1%) to 2014 (7.8%) apart from 2013 (7.5%).

Active travel among for nursery school pupils

- 41% of nursery school pupils were reported as normally walking to school, 4% cycling and 4% by scooter or skateboard, 49% overall.
- 4% of nursery school pupils as normally travelled to school by 'park and stride'

Trends: *(note: sample size has doubled since 2009)* Walking to nursery remained consistent at 41% to 42% from 2009 to 2014, cycling to nursery ~2% between 2009-2011, 3% 2012/13 and 4% in 2014, % scoot or skate to nursery has increased every year from 2009.
Note: a more detailed breakdown is available by year group and from 2008 to 2014 for nursery, primary, secondary school separately.

3.4 Scottish Household Survey (SHS) 2014

Publication: Transport Scotland report the travel results from the SHS 2014 in 'Transport and Travel in Scotland 2014 (published Aug 2015) http://www.transport.gov.scot/statistics/j389989-00.htm

Method of measurement: data collected from parent using SHS questions and travel diary

Data used for grading because it meets the three criteria of being recent, representative, probably relatively unbiased.

Summary: 51% of children walked to school, 2% cycled to school (53% overall).

Active travel by age *(note: a more detailed breakdown by age is available)*

- 61% of 4 to 11 year olds actively commuted to school (59% walked, 2% cycled) compared to 43% of 12 to 18 year olds (42% walked, 1% cycled).

Active travel by gender

- 50% of boys actively commuted to school (48% walked, 2% cycled) compared to 55% of girls (54% walked, 1% cycled)

Active travel by SIMD

- 61% in most deprived category walked to school, 53% in 2nd most deprived, 45% in 3rd most deprived, 43% in 4th, 53% in least deprived.
- 0.7% in most deprived category cycled to school, 2.2% in 2nd most deprived, 2.2% in 3rd most deprived, 2.1% in 4th, 1.3% in least deprived.

Trends: Percentage walking to school was 50-51% from 2004 to 2014, highest was 53% in 2007 and lowest was 49% in 2008. 1-2% cycled to school between 2004 and 2014

Indicator 4 Active and Outdoor Play Participation

Methods of Measurement: This indicator refers to participation in active play and the use of outdoor space for play/PA. Perceived safety, access to, and availability of outdoor/indoor spaces and opportunities for PA are dealt with in indicator 9. All sources of data use self/parent report measures.

Major Gaps in Scottish data: Biases in self/parent reports of active and outdoor play are unclear. Lack of data on objective measures of active and outdoor play across childhood and adolescence. No data source specifically measures active outdoor play.

Grading: There is no recommendation for the frequency/duration of active and outdoor play participation.

4.1 Health Behaviour in School-Aged Children (HBSC) 2014

Publication: HBSC 2014 Survey in Scotland National Report (published in 2015)
http://www.cahru.org/content/03-publications/04-reports/hbsc_nr14_interactive_final.pdf

Method of measurement: self-reported measures of frequency and duration of local greenspace use in the summertime (i.e. not in the past week/4 weeks etc) collected from 13 and 15 year olds (i.e. not 11 year olds). Questionnaires were administered between March and June, most questionnaires were returned by the end of May, thus some participants will have reported their behaviour from the previous year.

Data not used for grading as probable bias (as active and outdoor play varies seasonally and degree of bias in the self-report measure is unclear) and not specifically measuring active and outdoor play.

4.2. Scottish Household Survey (SHS) 2014

Publication: Scotland's People Annual Report: Results from 2014 Scottish Household Survey (published Aug 2015)
http://www.gov.scot/Publications/2015/08/3720/downloads

Method of measurement: Parent-reported measure of types of activities young people engage in within their local area (including 'sports and sporting activity' and 'other outdoor activities' in 8 to 21 year olds. *Note: does not provide a breakdown of participation by age group.*

Data not used for grading as degree of bias in the self-report measure is unclear, not specifically measuring active and outdoor play and age range is 8-21 years thus adults included in prevalence estimates.

4.3 Scottish Health Survey (SHeS) 2014

Publication: The following data is not provided in the main report, instead it is provided in the supplementary web tables – file 7 'child physical activity http://www.gov.scot/Topics/Statistics/Browse/Health/scottish-health-survey/Publications/Supplementary2014

Method of measurement: Self/parent-reported measure of participation in active play (activities include ride a bike, kick a ball around, run about outdoors or indoors, play active games). *Note: method used does appear to specifically measure active play, however indoor active play is included.*

Data not used for grading because degree of bias in the self-report measure is unclear and not specifically measuring active and outdoor play.

4.4 Growing Up in Scotland (GUS) 2013

No new data since previous report card

Indicator 5: Organised Sport Participation

Methods of measurement: All sources of data used self/parent report.

Major gaps in Scottish data: Lack of data specifically focusing on participation in sport.

Grading: There is no recommendation for the frequency/duration of organised sport participation.

5.1 Scottish Health Survey (SHeS) 2014

Publication: The Scottish Health Survey 2014: Volume 1: Main Report (published Sept 2015)
http://www.gov.scot/Publications/2015/09/6648 AND Further information (from The Scottish Health Survey 2014: Volume 1: Main Report and from supplementary web tables, not included in main report)
http://www.gov.scot/Topics/Statistics/Browse/Health/scottish-health-survey/Publications/Supplementary2014

Method of measurement: Self/parent-reported measure of participation in 'any sports or exercise activities in past week' in 2-15 year olds. *Note: measures participation in organised activities but does not specifically measure organised sport.*

Data not used for grading because the method does not specifically measure participation in organised sport

5.2. Scottish Household Survey (SHS) 2014

Publication: Scotland's People Annual Report: Results from 2014 Scottish Household Survey (published Aug 2015)
http://www.gov.scot/Publications/2015/08/3720/downloads

Method of measurement: Parent-reported measure of participation in 'sports or sporting activity' in 8 to 21 year olds. *Note: does not provide a breakdown of participation by age group and lack of information in the report on what was measured but unlikely to specifically focus on sport only as the adult measure of sports participation includes walking for recreational purposes etc.*

Data not used for grading because data aggregated for 8-21 year olds and is unlikely to be specific to sport.

Indicator 6: Diet (Consumption of Fruit and vegetables, NMES, fat and saturated fat in relation to recommendations)

Methods of measurement: self or parent report using 24-h recall (fruit and vegetables) and frequency of consumption of selected foods in the Scottish Health Survey (SHeS), and 4-day non-weighed diet diary in National Diet and Nutrition Survey (NDNS).

Major gaps in Scottish data: The SHeS fruit and vegetable questions are semi-quantitative but information on other foods describes frequency of consumption only and does not cover all foods and drinks. Around 1200 children are surveyed annually with trends in food frequency presented biannually (e.g. 2012-13). The NDNS provides comprehensive food and nutrient intake data but as only approximately 200 children in Scotland are included per

year only four year averages (e.g. 2008/9-2011/12) are published. There has been no repeat of the 2006 and 2010 surveys of sugar intake in Scottish children.

6.1 SHeS 2014. Publication (as for main SHeS report chapters 4 and 9 plus additional web tables)

Method of measurement: interviewer-administered questionnaire for a) fruit and vegetable consumption in portions per day in the previous 24h, with household measures used to give examples of portions (80g) and b) frequency of consumption of 16 selected other foods e.g. oily fish, processed meat, non-diet soft drinks and high fibre breakfast cereals using nine frequency options ('6 or more times a day' to 'less than 1 time per month or never').

Summary for grading: **Fruit and vegetable consumption in children & adolescents:**

In 2014 2-15 year olds had on average 2.8 portions per day: 10% of all children had had no fruit or vegetables in the previous day while 14% had 5 portions per day or more. There was no clear difference between boys and girls but younger children had a little more fruit and less vegetables than older children. There were clear differences between socio-economic groups: children in the most deprived areas had on average 2.4 portions per day compared with 3.2 portions per day among children in the least deprived areas.

Trends: The mean number of fruit and vegetable portions consumed has remained almost unchanged but the socio-economic disparity has increased a little since 2003.

Frequency of consumption of other foods: Data for 2012/2013/2014 combined show that boys consumed processed meats and biscuits more frequently than girls. 42% of children in the least deprived areas and 58% of children in the most deprived areas had non-diet soft drinks once a day or more and while 27% of those in the least derived areas and 47% of those in the most derived areas had crisps once a day or more. Socio-economic disparities in frequency of consumption of other foods were also seen, notably oily fish, cakes, high fibre bread and high fibre/low sugar breakfast cereal (higher in children in the least deprived areas) and in processed meats and chips (higher in children in the most deprived areas).Data for 2014 only shows that 23% of children in the least deprived areas and 30% of children in the most deprived areas reported having non-diet soft drinks once a day or more, lower than 30% and 45% respectively in the combined 2012/2013/2014 data.

6.2 SHS 2013

Method of Measurement: as for SHeS 2014.

Trends: In 2-15y olds there was an increase in the proportion eating oily fish once a week or more, from 8% in 2003 to 16% in2012/2013 and a decrease in the proportion eating crisps once a day or more from 52% in 2003 to 37% in 2012/2013. Changes in frequency of consumption of other foods were generally beneficial but were less marked.

6.3 National Diet and Nutrition Survey (NDNS) Scotland

Note: this report combines data from the years 2008-2012 to provide sufficient number of children. Methods: 4-day non-weighed diet diary.There were few differences in the intake of foods or nutrients between children in Scotland and those in the UK as a whole. In 1.5-3 y olds the energy intake was 4.88 MJ/d in boys and girls combined The mean energy intake in 4-10 y olds was 6.77 MJ/d in boys and 6.20 MJ/d in girls, while for 11-18 y olds mean energy intake was 8.42 MJ/d in boys and 6.41 MJ/d in girls. Total fat as a % food energy was 33.9 % in boys an 33.85 in girls (1.5-18y). Saturated fatty acids provided 13.2% food energy in boys and 12.9% food energy in girl, while non-milk extrinsic sugars (similar to added sugars) provided 15.8% energy in boys and 14.9% energy in girls, with the highest values of 16.3% seen in the 11-18y old boys.

The mean consumption of fruit, fruit juice and vegetables were 100, 53 and 96 g/d respectively in 4-10 y olds and 58, 54 and 75g/d respectively in 11-18 y olds. In boys the mean consumption of non-diet soft drinks was 145 g/d in 4-10 y olds and 362 g/d in 11-18 y olds while in girls the mean consumption was 132 g/d in 4-10 y olds and 292 g/d in 11-18 y olds.

Indicator 7: Obesity

Methods of measurement: All sources of data used for grading purposes had measured height and weight to calculate BMI, and for school-age children and adolescents BMI data were interpreted using the UK 1990 BMI reference data. All sources used BMI ≥ 85th percentile to define overweight and obesity and BMI ≥ 95th percentile to define obesity for school-age children and adolescents. Scottish NDNS data from 2008-2009, which became available in 2014, used the WHO Growth Standard to define overweight and obesity among children aged 2-3 years old.

Major gaps in Scottish data: Multiple sources of data using measured height and weight are available, thus current Scottish surveillance using BMI is adequate. However systematic reviews have shown that BMI provides conservative estimates of the prevalence of obesity (excessive fatness)-see Active Healthy Kids Scotland Report Card 2013 longform (www.activehealthykidsscotland.co.uk). BMI has a moderately high false negative rate (many children and adolescents who are excessively fat have an apparently healthy BMI, thus Scottish Surveillance data are underestimates of the scale of the problem.

7.1 Scottish Health Survey (SHeS) 2014

Publication: The Scottish Health Survey 2014: Volume 1: Main Report (published Sept 2015)
http://www.gov.scot/Publications/2015/09/6648

Method of measurement: Measured height and weight to calculate BMI, interpreted using the UK 1990 BMI reference data. BMI ≥ 85th percentile was used to define overweight and obesity and BMI ≥ 95th percentile was used to define obesity.

Data used for grading as recent & representative; data are biased though - at least two systematic reviews (Reilly et al Obes Rev 2014; Javed et al Pediatr Obes 2014) have shown that BMI based estimates of obesity prevalence underestimate prevalence substantially (high false negative rate which is not balanced by a small false positive rate). Conservative nature of prevalence estimates argue for a lower grade.

Summary: Among 2-15 year olds, 31% were overweight and obese (17% were obese). 28% of boys and 34% of girls were overweight and obese (16% of boys and 18% of girls were obese). *Note: in all other years since 1998, the proportion has been higher for boys than girls, they suggest this difference may be due to sampling fluctuation.* Prevalence of overweight and obesity increased with age in girls and boys (though % was the same for boys age 2-6 and 7-11 years, see details below). In both sexes obesity is socially patterned; 11% of boys and 15% of girls from the least deprived areas were obese compared to 17% of boys and 28% of girls from the most deprived areas.

Further information (from the Scottish Health Survey 2014: Volume 1: Main Report)

Proportion of children overweight and obese by age

- 2-6 years = 27% overweight and obese (13% obese)
- 7-11 years = 32% overweight and obese (18% obese)
- 12-15 years = 37% overweight and obese (21% obese)

Proportion of children overweight and obese by age and gender
GIRLS

- 2-6 years = 27% overweight and obese (13% obese)
- 7-11 years = 36% overweight and obese (19% obese)
- 12-15 years = 43% overweight and obese (23% obese)

BOYS

- 2-6 years = 27% overweight and obese (13% obese)
- 7-11 years = 27% overweight and obese (17% obese)
- 12-15 years = 32% overweight and obese (20% obese)

Trends: Since 1998, the proportion of overweight and obese children (aged 2-15) has fluctuated between 29% and 33% (31% in 2014). The proportion of children overweight (incl obese) and obese have remained fairly stable in recent years. The proportion of overweight and obese boys in 2014 (28%) was similar to the level in 1998 (29%), but significantly below that in 2008 (38%) and 2011 (36%). For girls, 34% were overweight and obese in 2014, significantly higher than in 2013 (27%), prevalence has ranged from 27% to 30% in all other years.

Proportion of children overweight and obese by area deprivation
Being overweight (but not obese) was not associated with area deprivation, figures were similar across quintiles in most years, e.g. in 2014, 13% in least deprived, 14% (4th) 13% (3rd), 16% (2nd), 15% (most deprived). In contrast, in every year, children living in the least deprived areas had the lowest levels of obesity and, from 2009 onwards, those in the most or 2nd most deprived areas had the highest levels, e.g. in 2014, 13% in least deprived, 18% (4th) 14% (3rd), 18% (2nd), 22% (most deprived). The gap between rates in the most and least deprived areas has fluctuated over time, and was as low as 1% in 2008.

7.2 Growing Up in Scotland (GUS)

Data on height and weight not reported in GUS 2013 report (published Oct 2015). This survey has measured height and weight in Birth Cohort 1 (born 2004/05) when children were 6 years old (measured 2010/11 – data available from the UK data service) and 8 years old (measured 2012/13, data available from GU, unclear if this has been published). Not clear if/when height and weight have been measured for Birth Cohort 2 (born 2010/11).

Data not available for grading at present.

7.3 Child Health Surveillance Programme: School Year 2014/15

Publication: ISD Scotland reports Primary 1 Body Mass Index (BMI) Statistics Scotland School Year 2014/15 (published Feb 2016) https://www.isdscotland.org/Health-Topics/Child-Health/Publications/2016-02-16/2016-02-16-P1-BMI-Statistics-Publication-2014-15-Report.pdf

Method of measurement: Routinely collected height and weight measurements at Primary 1 health reviews for 2014-2015 school year. BMI calculated and interpreted using the UK 1990 BMI reference data. BMI ≥ 85th percentile was used to define overweight and obesity and BMI ≥ 95th percentile was used to define obesity

Data used for grading with caveats the same as for SHeS as noted above (7.1).

Summary: 22% of P1 pupils were overweight and obese, 12% were overweight (85th-95th centile) and 10% were obese (>95th), and socially patterned.

Further information (from the report 'Primary 1 Body Mass Index (BMI) Statistics Scotland School Year 2014/15' and data tables http://www.isdscotland.org/Health-Topics/Child-Health/Publications/data-tables.asp?id=1591#1591**)**

Proportion of children overweight and obese by gender

- 22.1% of boys compared to 21.4% of girls were overweight and obese (10% obese, boys and girls combined). *Prevalence for each gender from 2005/06 to 2014/15 also available.* The gap between boys and girls has narrowed over time, although prior to 2011/12 not all boards submitted data, which may account for some of the difference before this point.

Proportion of children overweight and obese by area deprivation

- There is a strong positive relationship between deprivation and the proportion of overweight and obese children in Primary 1. For overweight and obese, 17.1% in least deprived SIMD category, 20.5% (4th), 21.7% (3rd), 23.4% (2nd), 25.1% (most deprived). For obese, 7.0% in least deprived category, 8.3% (4th) 9.5% (3rd), 11.1% (2nd), 12.1% (most deprived). Greater inequalities for children who are obese compared to children who are overweight. In the least deprived areas (SIMD quintile 5), 10.1% of children were overweight compared to 12.9% in the most deprived areas (SIMD quintile 1). *Prevalence by SIMD from 2005/06 to 2014/15 also available.*

Trends: The BMI distribution of children in Primary 1 has remained broadly similar over the period 2005/06 to 2014/15 with between 21% to 23% of children overweight including obese (9-10.5% for obese, 11.6-12.8% for overweight).

7.4 National Diet and Nutrition Survey (NDNS) for Scotland

Publication: National Diet and Nutrition Survey Rolling Programme (NDNS RP): Results from Years 1-4 (combined) for Scotland (2008/09-2011/12) published Sept 2014 http://www.foodstandards.gov.scot/national-diet-and-nutrition-survey-rolling-programme-results-years-1-4-combined-scotland-200809

Method of measurement: Measured height and weight to calculate BMI. UK World Health Organization (WHO) growth charts used for children aged 2-3 years. UK BMI 1990 reference data used for children aged 4-18 years. Differences between children aged 2-3 years and those aged 4-18 years should be viewed with caution due to the use of different growth standards. BMI ≥ 85th percentile was used to define overweight and obesity and BMI ≥ 95th percentile was used to define obesity. *Note: for the aggregated data for children aged 2-18 years below, it looks like the UK1990 reference values were applied to 2-3 year olds though this is not explained in the report or the supplementary table 4.1b.*

Data used for grading as it is relatively recent (includes new prevalence data for 2-3 year olds), representative, and biases known as noted above in 7.1.

Summary: Among children aged 2-18 years old, 32% of boys and 30% of girls were overweight including obese, 19% of boys and 16% of girls were obese.

Further information (from the report National Diet and Nutrition Survey Rolling Programme (NDNS RP): Results from Years 1-4 (combined) for Scotland (2008/09-2011/12) and supplementary table 4.1b

Proportion of BOYS overweight and obese by age

- 2-3 years = 53% overweight incl obese (27% obese) *note: based on WHO growth standard*
- 4-10 years = 27% overweight incl obese (15% obese)
- 11-18 years = 32% overweight incl obese (20% obese)

Proportion of GIRLS overweight and obese by age

- 2-3 years = 27% overweight incl obese (7% obese) *note: based on WHO growth standard*
- 4-10 years = 28% overweight incl obese (14% obese)
- 11-18 years = 32% overweight incl obese (20% obese)

Indicator 8: Family and Peer Influence

Methods of measurement: Little direct quantitative evidence of influence on behaviours by family or peers is available on relevant health behaviours. In the absence of direct evidence of this sort indirect data were used: relevant adult health behaviours were used as proxies for family influence as they represent adult societal norms; child and adolescent health behaviours and outcomes (indicators 1,2,6, 7) were used as peer norms**.** Reliance on self-report methods increases risk of bias.

Major gaps in Scottish data: In Scotland, as in other countries, surveillance data on family and peer influence is generally limited. However, the adult measures of health behaviours and outcomes used as proxies for family influence are generally conservative. Dietary and PA data are self-reported and prone to biases which underestimates the scale of non-adherence to dietary and PA recommendations, and BMI provides a conservative estimate of obesity prevalence (as in children), there is a high false negative rate, particularly in women, so that obesity is much more prevalent than would be suggested by prevalence of high BMI. Major gaps in Scottish diet data: information on eating habits in adults in the SHeS is collected every second year in a subsample only.

Adult Overweight and Obesity Prevalence

8.1 Scottish Health Survey (SHeS) 2014

Method of measurement: Measured height and weight to calculate BMI

- 65% of adults were overweight and obese (28% were obese, BMI ≥ 30)
- 69% of men were overweight and obese (26% obese)
- 61% of women were overweight and obese (29% obese)

Note: a more detailed breakdown is available by age group, SIMD and from 2003-2014.

8.2 National Diet and Nutrition Survey (NDNS) for Scotland 2008/09-2011/12

Method of measurement: Measured height and weight to calculate BMI

Men

- 19-64 years = 68% were overweight and obese (27% were obese)
- 65+ years = 89% were overweight and obese (31% were obese)

Women

- 19-64 years = 60% were overweight and obese (27% were obese)
- 65+ years = 74% were overweight and obese (37% were obese)

Adult Participation in MVPA

8.3 Scottish Health Survey (SHeS) 2014

Method of measurement: Self-reported measure of time spent in MVPA, used to calculate compliance with the adult PA guidelines (≥150 minutes of moderate PA or 75 minutes of vigorous PA per week or an equivalent combination of both, in bouts of 10 minutes or more, thus activities of low intensity, and activities of less than 10 minutes duration were not included in the assessment.

Summary: 63% of adults (68% of men and 59% of women) met the PA guidelines. *Note: These figures are markedly higher since the introduction of the new PA guideline in 2012 (i.e. ≥150 minutes of moderate PA or 75 minutes of vigorous PA per week or an equivalent combination of both), in contrast results from the 2011 SHeS showed that 39% of adults (45% of men and 33% of women) met the PA guideline of 5 x 30 mins of at least moderate PA.*

8.4 National Diet and Nutrition Survey (NDNS) for Scotland 2008/09-2011/12

Method of measurement: Self reported time spent in MVPA; recorded type and amount of PA using the Recent Physical Activity Questionnaire (RPAQ, developed by the MRC Epidemiology Unit Cambridge) and used the Physical Activity Compendium to categorise the intensity of each physical activity recorded in the RPAQ.

Average hours/day spent in MVPA

- Men aged 19-64 years = 1.3 hours/day; 65+ years = 0.3 hours/day
- Women aged 19-64 years = 0.6 hours/day; 65+ years = 0.1 hours/day

Adult Diet

8.5 SHeS Food Consumption data 2014

Self-reported frequency of consumption of 16 selected food groups from interviewer-administered questionnaire collected every 2 years in a subsample.

Trends in adult eating habits: Data from 2008, 2010, 2012 and 2014 show a small increase in the proportion of adults aged 16 or over who consumed non-diet soft drinks once a day or more (from 23% in 2008 to 27% in 2012) and consuming crisps once a day or more (from 17% in 2008 to 21% in 2014), while the proportion eating potatoes, pasta and rice five or more times a week decreased from 55% in 2008 to 51% in 2014. There was also a decrease in the proportion of women consuming red meat twice a week or more (from 59% in 2008 to 51% in 2014) and in women consuming at least 2-3 slices of high fibre bread a day (from 42% in 2008 to 37% in 2014). Among adults in the most deprived areas the proportion consuming sweets of chocolate once a day or more increased from 24% in 2008 to 30% in 2012 while the proportion among those in the least deprived areas fell from 32% to 25% over the same period. The proportion consuming non-diet soft drinks once a day or more increased from 28% in 2008 to 37% in 2014 but there was little change among those in the least deprived areas over the same period.

8.6 (SHeS) 2014 fruit & veg consumption: 20% of adults (20% of men and 20% of women) reported eating 5 portions of fruit and veg a day. *Note: a more detailed breakdown is available by age group, SIMD and from 2003-2014.*

8.7 National Diet and Nutrition Survey (NDNS) for Scotland 2008/09-2011/12: 25% of adults aged 19 to 64 years and 37% of adults aged 65 years and over met the "5-a-day" guideline ***% meeting the 5 a day guideline)***

- Men aged 19-64 years = 24%; 65+ years = 43%
- Women aged 19-64 years = 26%; 65+ years = 33%

Adult norms/modelling -physical activity behaviour

8.8 Scottish Household Survey (SHS) 2014

Method of measurement: Self-reported measures of adult visits to the outdoors, participation in sport and exercise, access and use of greenspace (defined as a park, green or other area of grass but excludes private gardens) in the local neighbourhood and satisfaction with that greenspace.

- 49% of adults access local greenspace once a week or more
- 48% of adults visit the outdoors at least once per week
- 78% of adults had participated in any sport and exercise (including recreational walking) in last 4 weeks, (81% men and 75% women).
- 51% of adults participated in sport and exercise (excluding recreational walking) in the last 4 weeks (57% men and 46% women).
- 69% of adults live within a 5 min walk of greenspace; 76% satisfied/very satisfied with local greenspace, 9% dis-satisfied

Note: above data is also available by gender, age group and SIMD

Indicator 9: Community and the Built Environment

Methods of measurement: This indicator refers to perceived safety, access to, and availability of outdoor/indoor spaces and opportunities for PA, not actual participation in active and outdoor play, which is dealt with in indicator 4. All sources of data use self/parent report measures.

Major Gaps in Scottish data: Biases in self/parent reports of perceived safety, access to and availability of spaces and opportunities for PA are unclear.

Safety

9.1 Health Behaviour in School-Aged Children (HBSC) 2014

Method of measurement: Perceptions of neighbourhood environment collected from 13 and 15 year olds (i.e. not 11 year olds).

Data used for grading because it meets the criteria of being recent, representative, degree of bias unclear.

- 59% always feel safe in their local area (60% of boys and 57% of girls) and 30% feel safe most of the time (29% of boys, 31% of girls)
- Decline in the % of girls who always feel safe in their local area from 61% at age 13 to 52% at age 15, while there is little age difference for boys (62% at age 13 and 58% at age 15).
- 66% felt they could trust people in their local area (67% of boys, 64% of girls). Higher at age 13 than age 15 for boys (71% vs 63%), but not girls (66% at age 13 vs 62% at age 15).

9.2 Scottish Household Survey (SHS) 2014

Method of measurement: Householders with a child/children aged 6-12 years old were asked questions on how safe it is for children to use specific types of play areas.

Data used for grading because it meets the criteria of being recent, representative, degree of bias unclear.

Percentage of households with young children (6-12 years) that think it is very or fairly safe for children to:

- Walk or cycle to play areas on their own: 42% to wooded environment, 57% to park and 62% to playground (lower in more deprived areas).
- Go to play areas with two or three friends to play: 67% for playground, 64% for park and 47% for wooded environment (lower in more deprived areas)

Overall, feelings of safety are higher for each type of play area when going with two or three friends than they are when children travel alone. There is little difference in feelings of safety when considering the streets around the respondent's home (58% with friends, 55% without friends and only 2-3% lower in more deprived areas).

- Percentage of households who are very or fairly concerned of children being harmed by adults in play areas: 33% for playgrounds, 37% for parks, 49% for wooded environment, 25% for street/road (higher in more deprived areas).
- The average age that most householders with young children felt comfortable with children playing without supervision at such play areas was around 9/10 years old, increased to 11 years old when considering children playing within a natural environment/wooded area.

Accessibility

9.3 Health Behaviour in School-Aged Children (HBSC) 2014

Method of measurement: Perceptions of neighbourhood environment collected from 13 and 15 year olds (i.e. not 11 year olds).

Data used for grading because it meets the criteria of being recent, representative, degree of bias unclear.

Summary: 59% felt there are good places to spend their free time locally, with no gender difference though the proportion of boys and girls who felt there are good places to spend their free time locally declined with age (65% of boys and 64% of girls at age 13 years, 53% of boys and 53% of girls at age 15 years).

9.4 Scottish Household Survey (SHS) 2014

Method of measurement: Householders with a child/children aged 6-12 years old were asked questions on the types of play areas available for children to play in.

Data used for grading because it meets the criteria of being recent, representative, degree of bias unclear.

Summary: 91% of households with children aged 6-12 years have access to at least one play area in their neighbourhood: 58% have access to a playground, 65% have access to a park, 55% have access to a field or other open space, 49% have access to a natural environment/wooded area (slightly lower in the more deprived areas for playground, open space, natural environment/wooded area.

Indicator 10 National Policy, Strategy, and Investment

The Active Healthy Kids Report Card Scotland 2013 (shortform and longform- see www.activehealthykidsscotland.co.uk) established that Scotland has a generally favourable national policy environment, with multiple relevant policies, though limited evidence of policy implementation, evaluation, and effect. This indicator was graded B in 2013.

National policies introduced after 2013, notably the More Active Scotland/Commonwealth Games Legacy, are welcome. There was some evidence of slightly greater focus on policy implementation than in 2013, with outcome agreements between national and local government in relation to policy (National Performance Framework; Active Scotland Outcome Framework).