



The Impact of COVID-19 on Physical Activity and Health in Children and Adolescents

Results from the Active Healthy Kids Scotland COVID-19 Report Card



Acknowledgments

The Active Healthy Kids Scotland COVID-19 Report Card is a 'state of the nation' report on the impact of the COVID-19 pandemic on the physical activity and health of Scottish children and adolescents and the policy response to the pandemic.

The report card was produced by the University of Strathclyde (Prof John J Reilly; Dr Farid Bardid; Maria Loban; Dr Adrienne Hughes; Prof Marion Henderson; Prof Jennifer Davidson), University of Stirling (Dr Simone Tomaz), and University of Aberdeen (Dr Leone Craig). Initial data searches were completed by students Jessica Docherty and Anna McConaghy from the University of Strathclyde. The draft grades were reviewed by stakeholders from a range of sectors within Scotland and the Active Healthy Kids Global Alliance. Illustrations for this project were created by Viviyan Hashim.

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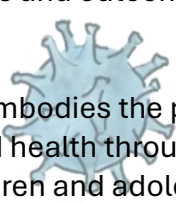


Introduction


Active Healthy Kids Scotland Report Cards are evidence-based national reports on physical activity and health in Scottish children and adolescents (Bardid et al., 2022; Hughes et al., 2018; Reilly et al., 2014, 2016; Tomaz et al., 2024). The report cards use a standardised methodology to summarise evidence and produce grades for 11 key indicators. These include important health behaviours (overall physical activity, organised sport and physical activity, active play, sedentary behaviour, active transportation, diet) and health outcomes (obesity, physical fitness), as well as key sources of influences on health behaviours and outcomes (family and peers, community and environment, government and policy).



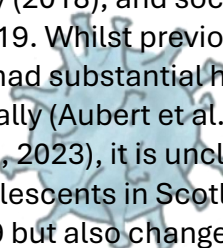
Active Healthy Kids Scotland embodies the principle of ‘better data for better health,’ highlighting its commitment to improving child health through robust data insights. We therefore monitor physical activity and health among children and adolescents in Scotland using national public health surveillance data. By doing so, we strive to not only support evidence-informed policy and practice for better health, but also to highlight gaps in surveillance and monitoring and formulate recommendations for better data.



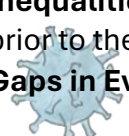
The report cards are compiled by a working group of experts in child physical activity, sedentary behaviour, physical fitness, diet, obesity, and policy from several Scottish universities. These report cards are part of the Active Healthy Kids Global Alliance, an international network that has been producing report cards for over 10 years, spanning more than 70 countries and regions (Morrison et al., 2024). The report cards serve as valuable tools for knowledge exchange while also contributing to research.




Over the past decade, we have published four report cards, each focusing on a specific theme: screen time (2013), active play (2016), obesity (2018), and socioeconomic inequality (2021). This latest report card focuses on the impact of COVID-19. Whilst previous research has shown that COVID-19 lockdowns and school closures have had substantial harmful impacts on physical activity and health among children and adolescents globally (Aubert et al., 2022; Chang et al., 2021; Madigan et al., 2022; Neville et al., 2022; Walker et al., 2023), it is unclear how the pandemic has impacted physical activity and health in children and adolescents in Scotland. This card not only reports on changes in the indicators pre- and post-COVID-19 but also changes in inequalities—specifically socioeconomic status and gender—and the policy response to the pandemic.

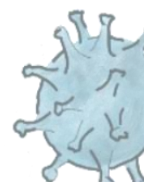


In this report card, the following format is used for each indicator:

- **Benchmark:** The Active Healthy Kids Global Alliance globally recognised guidelines are stated.
 - **Grade and Grading Summary:** Post-COVID-19 Grades are reported and compared to pre-COVID-19 grades to explore potential changes following the pandemic. The Government indicator focused on government and policy responses to the pandemic.
 - **Inequalities:** Comments are provided on inequalities (by socioeconomic status and gender) prior to the pandemic, and changes in those inequalities exacerbated by the pandemic.
 - **Gaps in Evidence:** Any limitations of data sources used are highlighted for the indicator.
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Through collating and examining public health data, the Active Healthy Kids Scotland COVID-19 Report Card is intended to broaden our understanding of changes in child and adolescent health before and after the pandemic, inform pandemic recovery and future pandemic preparedness, and improve future monitoring of physical activity and health indicators in Scotland.






Information on Active Healthy Kids Scotland—including previous report cards and publications—is available at <https://www.activehealthykidsscotland.co.uk/>.

Abbreviations and Terms



AHKGa	Active Healthy Kids Global Alliance
AHKS	Active Healthy Kids Scotland
BMI	Body Mass Index
CEYRIS	The Public Health Scotland COVID-19 Early Years Resilience and Impact Survey
FAS	Family Affluence Scale
GUS	Growing Up in Scotland
HBSC	Health Behaviours in School-Age Children
HUS	Hands Up Scotland
MVPA	Moderate-to-vigorous intensity physical activity
NDNS	National Diet and Nutrition Survey
SDGs	Scottish Diet Goals
SES	Socioeconomic status
SHeS	Scottish Health Survey
SHS	Scottish Household Survey
SIMD	Scottish Index of Multiple Deprivation
TATIS	Transport & Travel in Scotland
WHO	World Health Organization



Methodology

To assess the impact of COVID-19 on physical activity and health among Scottish children and adolescents, we adopted the AHKGA methodology. The physical activity and health indicators were assessed using data sources post-COVID-19 (between 2020 and 2022)—not substantially disrupted by the pandemic—and compared these with data sources pre-COVID-19 (before 2020) examined in the 2021 Active Healthy Kids Scotland Report Card. For the Government indicator, we focused on government and policy responses to the pandemic. To ensure suitability for grading, data were required to be nationally representative, and minimally biased. This means the measurement methods should not substantially overstate or understate the prevalence of health behaviours or health outcomes. The report card working group conducted a critical evaluation of the available data to determine its representativeness and potential biases. Subsequently, the preliminary grades were reviewed by various stakeholders across Scotland via online consultation. Finally, the report card grades were peer-reviewed by two experienced members from the Active Healthy Kids Global Alliance board.

A full description of the AHKGA methodology is available at <https://www.activehealthykids.org/>.

Active Healthy Kids Global Alliance Grading Rubric

Grade	Interpretation
A+	94%-100%
A	We are succeeding with a large majority of children (87%-93%)
A-	80%-86%
B+	74%-79%
B	We are succeeding with well over half of children (67%-73%)
B-	60%-66%
C+	54%-59%
C	We are succeeding with about half of children (47%-53%)
C-	40%-46%
D+	34%-39%
D	We are succeeding with less than half of children (27%-33%)
D-	20%-26%
F	We are succeeding with very few children (<20%)
INC	Incomplete Grade, where Scottish data were not available or were insufficient/inadequate to assign a grade







Summary of Indicators


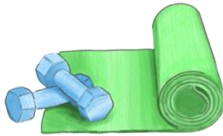

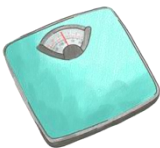




Indicator	Definition
Sedentary Behaviour	Any waking behaviour characterised by an energy expenditure ≤ 1.5 metabolic equivalents, while in a sitting, reclining or lying posture.
Overall Physical Activity	Any bodily movement produced by skeletal muscles that requires energy expenditure.
Organised Sport and PA	A subset of physical activity that is structured, goal-oriented and competitive.
Active Play	Active play may involve symbolic activity or games with or without clearly defined rules; the activity may be unstructured/ unorganised, social/ solitary, but the distinguishing features are a playful context, combined with activity that is significantly above resting metabolic rate. Active play tends to occur sporadically, with frequent rest periods, which makes it difficult to record.
Active Transportation	Active transportation refers to any form of human-powered transportation walking, cycling, using a wheelchair, in-line skating or skateboarding.
Physical Fitness	Characteristics that permit a good performance of a given physical task in a specified physical, social, and psychological environment.
Diet*	% of children and adolescents consuming at least 5 portions of fruit and vegetables a day, % of children and adolescents meeting the Scottish Dietary Goals (SDGs) which were revised in 2016 (e.g. average intake of free sugars should not exceed 5% of total energy intake in children over 2 years, average intake in saturated fat should not exceed 11% of food energy intake (often equivalent to total energy in children).
Obesity*	% (prevalence) of obesity in children and adolescents. Ideally, prevalence of obesity should be estimated based on body fatness measures but in Scotland, as in most countries, body fatness is not measured and simpler proxy Body Mass Index (BMI), is used. In children and adolescents BMI should be expressed as an age and sex specific centile or SD score relative to reference or standard data. In Scotland, for school-age children up to 18 years of age the UK 1990 reference data is used, for children aged under 5 years the WHO growth standards should be used.
Family & Peer Influence	Any member within the family who can control or influence the physical activity opportunities and participation of children and youth in this environment.
Community & Environment	Any policies or organisational factors (e.g., infrastructure, accountability for policy implementation) in the municipal environment that can influence the physical activity opportunities and participation of children and youth in this environment.
Government	Any governmental body with authority to influence physical activity opportunities or participation of children and youth through policy, legislation or regulation.

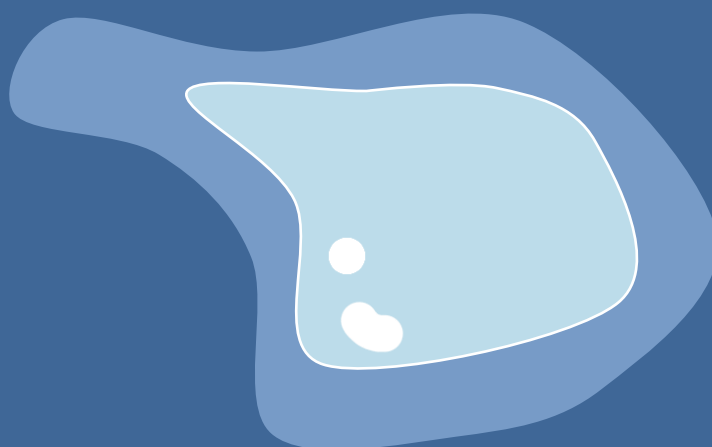
*The Diet and Obesity indicators are not Global Matrix Indicators.

Summary of Grades and Inequalities

Indicator	Pre-COVID-19 Grade	Post- COVID-19 Grade	Summary of inequalities identified
Sedentary Behaviour 	F	INC	<p>Socioeconomic status (SES): For meeting screen time guidelines, inequalities widened post-COVID-19, although adherence to screen time guidelines decreased across all SES groups (HBSC, 2022).</p> <p>Gender: Post-COVID-19, the gender gap in TV viewing decreased with more girls engaging in less than 2hrs TV viewing compared to boys. While the number of girls engaging in less than 2hrs of video gaming decreased, slightly narrowing the gap between boys and girls (HBSC, 2022).</p>
Overall Physical Activity 	INC	INC	<p>Socioeconomic status: Physical activity levels of adolescents increased post-COVID-19, but the rise was greater in those from high SES backgrounds compared to adolescents from low SES backgrounds, widening SES-related inequalities (HBSC, 2022).</p> <p>Gender: Adolescent boys experienced a greater increase in physical activity levels post-COVID-19 compared to adolescent girls, leading to a widening gender gap (HBSC, 2022).</p>
Organised Sport and PA 	B-	B-	<p>Socioeconomic status: Participation rates in organised sport and physical activity remained higher among adolescents from high SES backgrounds, with a modest reduction in inequality in adolescents (SHeS, 2022).</p> <p>Gender: Adolescent boys consistently reported higher participation rates than adolescent girls from age 11 onward, with no change in the gender gap (SHeS, 2022).</p>
Active Play 	INC	INC	<p>Socioeconomic status: No significant differences were likely observed in daily active play between children from high (49%) and low SES (52%) backgrounds pre-COVID-19. Changes cannot be assessed due to disruptions in data collection of the SHeS 2021 survey.</p> <p>Gender: Boys were more likely than girls to engage in daily active play in 2021, with similar patterns observed in 2018. However, changes cannot be assessed due to disruptions in data collection of the SHeS 2021 survey.</p>

Active Transportation 	C-	C	<p>Socioeconomic status: Post-COVID-19, active travel declined in low-SES areas (from 66% in 2019 to 56% in 2022) but remained stable in high-SES areas (around 52%), narrowing the SES gap in active travel (HUSS, 2022).</p> <p>Gender: No significant differences between gender and no changes observed from pre- to post-COVID-19 (SHS, 2022).</p>
Physical Fitness 	INC	INC	<p>Socioeconomic status: Inequalities in physical fitness could not be assessed due to the absence of surveillance data.</p> <p>Gender: Inequalities in physical fitness could not be assessed due to the absence of surveillance data.</p>
Diet 	INC	INC	<p>Socioeconomic status: While more children in the lowest SES group met the 5-a-day guideline post-COVID-19, SES inequalities persist (SHeS, 2022).</p> <p>Gender: Boys showed greater improvements in fruit and vegetable intake post-COVID-19, narrowing the gap with girls (SHeS, 2022).</p>
Obesity 	INC	INC	<p>Socioeconomic status: Data for changes in obesity rates by SES were inconsistent (P1BMISS, 2021/2022 and SHeS, 2022). However, obesity rates remained higher in low SES areas.</p> <p>Gender: Changes were inconsistent across datasets.</p>
Family & Peer Influence 	D-	INC	<p>Socioeconomic status: Inequalities in adult overweight and obesity rates narrowed post-COVID-19 (SHeS, 2022). For all other benchmark requirements, comparable data from pre- to post-COVID-19 were not available.</p> <p>Gender: Post-COVID-19, gender inequality widened, with men being more likely to meet MVPA and muscle/bone strengthening guidelines, and the obesity gap increased from 6 to 9 percentage points (SHeS, 2022).</p>
Community & Environment	B-	INC	<p>Due to the absence of relevant data, the assessment of inequalities or changes in inequalities from pre- to post-COVID-19 by either SES or gender is not possible.</p>

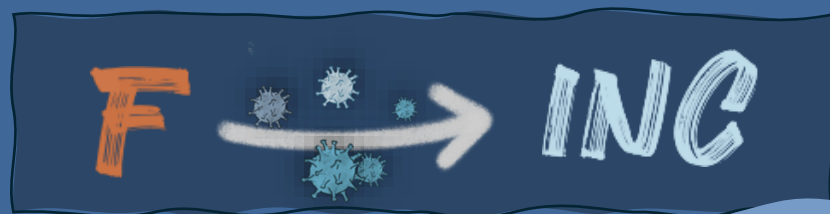
Indicator	COVID-19 Response Grade	Grading Summary
Government 	A-	(Physical activity policy) The evidence of leadership and commitment to providing PA opportunities for all children and youth was persistent. This is evident through sustained funding and the continuation or expansion of effective pre-existing policies during the pandemic.
	B	(Diet policy) None of the new policies were focussed on improving the healthiness of diets nor tackling childhood obesity. The focus was on the immediate urgent need to reduce impacts on access to food especially amongst vulnerable groups. The policies had clear actions in terms of this, with clearly identified funding and responsible organisations, but were weaker on reporting structures and monitoring and evaluation plans.



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Sedentary Behaviour



AHKG Benchmark:

% of children and youth who meet the Canadian Sedentary Behaviour Guidelines (5–17 year olds: no more than two hours of recreational screen time per day; 2–4 year olds: no more than one hour of sedentary screen time per day. Note: The Guidelines currently provide a time limit recommendation for screen-related pursuits, but not for non-screen-related pursuits.

	Pre-COVID-19		Post-COVID-19	
Grade	F	we are succeeding with very few children [<20%]	INC	incomplete grade


Grading Summary:

The most useable data sources available were the SHeS (Scottish Health Survey), and the HBSC (Health Behaviour in School-aged Children) Scotland survey, both conducted in 2022.

The SHeS (2022) reported recreational screen time and other non-screen related sedentary time together as a single measure rather than separately, indicating the percentage of children aged 5 to 15 engaging in sedentary behaviour for 0 to 2.25 hours per day on weekdays (and 3 hours or less on weekends). Notably, the threshold for weekday sedentary time was reduced from 3 hours per day (SHeS 2019) to 2.25 hours per day (SHeS 2022). This change in measurement made the pre- and post-COVID-19 data incomparable. Given that the international benchmark focuses on limiting screen time to 2 hours or less (rather than 2.25 or 3 hours as is recorded in the SHeS), it was not possible to assign a grade based on this data or report on any changes from pre- to post-COVID-19. The HBSC survey provided data on specific types of screen time, such as videogaming, social networking, TV viewing and internet browsing, but only for adolescents aged 11, 13 and 15 years, which does not provide a comprehensive review spanning childhood to adolescence. Furthermore, changes in questionnaire methodology between the pre- and post-COVID-19 periods rendered these results incomparable.

Different types of screen time are reported separately in the HBSC survey. It is not entirely clear to what extent these categories are distinct, additive or overlapping (e.g. screen stacking). There is likely to be at least some additive component, therefore, the estimates provided can be considered






conservative. Due to limitations in data comparability, methodology changes, and the mismatch between the available data and the international grading benchmark, it was not feasible to assign a grade for sedentary behaviour. As such, an **INC** grade was assigned.

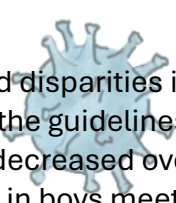
Socioeconomic Inequality:

According to the HBSC, the disparity in meeting screen time guidelines between low and high SES groups widened. For daily TV viewing, the gap increased from 9 percentage points (2018) to 17 percentage points (2022). For videogaming, the gap increased from 10 percentage points (2018) to 12 percentage points (2022) although adherence to screen time guidelines for videogaming decreased across all SES groups.



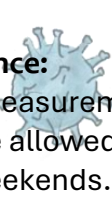
Gender Inequality:

The HBSC surveys also revealed disparities in screen time by gender. Post-COVID-19, a greater proportion of adolescents met the guidelines for TV viewing, while fewer met the recommendations for videogaming. Gender gaps decreased over time, but significant changes were observed. There was a 12-percentage point increase in boys meeting TV viewing guidelines, and 5-percentage point increase in girls meeting guidelines (narrowing the gap between boys and girls, with 5% more girls meeting the guidelines than boys in 2018, and 2% more boys than girls meeting the guidelines in 2022). For videogaming, there was a 12-percentage point decrease in girls meeting videogaming guidelines, slightly narrowing the gap between boys and girls. Additionally, social networking, which was not recorded pre-COVID-19, showed that 35% of boys and 40% of girls met the guidelines in 2022.

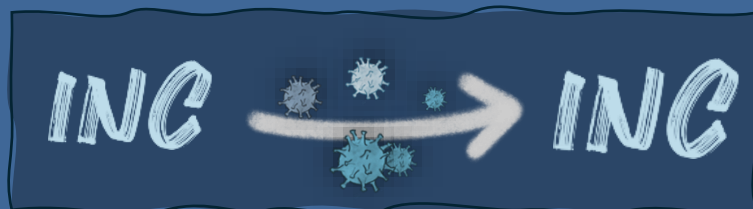


Gaps in Evidence:

Gaps in the measurement of sedentary behaviour persist in Scottish data. The SHeS (2022) questionnaire allowed for a minimum reported sedentary leisure time of 2.25 hours on weekdays and 3 hours on weekends. This lowest possible response exceeds the international benchmark of 2 hours per day for recreational screen time, indicating that the survey framework is not fully aligned with the international benchmark. Similarly, the SHeS (2019) focused on 'sedentary leisure time', with the lowest possible measurement of 3 hours, incorporating other sedentary behaviours besides recreational screen time, making it difficult to compare the pre and post pandemic data on screen time. While the HBSC data focuses on screen time, the HBSC 2018 report presented data in percentages, and the 2022 report presented data in hours, highlighting a persistent inconsistency. Furthermore, none of the sources account for the possibility of multiple screen use, or screen stacking. Therefore, screen time cannot be assessed against international benchmarks.



Overall Physical Activity



AHKGA Benchmark:

% of children and youth who meet the Global Recommendations on Physical Activity for Health (WHO, 2020), which recommend that children and youth (5-18 years) accumulate an average of at least 60 minutes of moderate- to vigorous-intensity physical activity (MVPA) per day. Children under 5 years of age who are capable of walking unaided should be physically active daily at any intensity for at least 180 minutes, spread throughout the day, and this should include 60 minutes of MVPA per day (WHO, 2019; UK Chief Medical Officers, 2019; Canadian Society for Exercise Physiology, 2017). When an average cannot be estimated, % of children and youth meeting the guidelines on at least 4 days per week is considered.



	Pre-COVID-19		Post-COVID-19	
Grade	INC	incomplete grade	INC	incomplete grade

Grading Summary:


The Scottish Health Survey (SHeS) and the Health Behaviour in School-aged Children (HBSC) Scotland survey (2022) were identified as the most potentially gradable data sources.

However, both surveys have limitations that restrict their utility for comprehensive grading. An overall grade for physical activity could not be assigned due to insufficient data. The HBSC Scotland survey focuses solely on 11-, 13-, and 15-year-olds, which limits its ability to capture a comprehensive view of physical activity across the full spectrum of childhood and adolescence. Similarly, the SHeS (2022) provided data on physical activity levels, however, no information on intensity of PA was collected as the SHeS does not measure MVPA and cannot be used to against the international guidelines.

According to the HBSC Scotland survey, 71% of adolescents in 2022 engaged in at least 60 minutes of moderate-to-vigorous physical activity (MVPA) on 4 or more days per week, up from 64% in 2018. However, the percentage of adolescents meeting the daily MVPA guideline of 60 minutes per day remained significantly lower, increasing only slightly from 17% in 2018 to 24% in 2022.

Socioeconomic Inequality:


The SHeS did not report disaggregated data by SES as per the international benchmark. However, the HBSC survey data revealed that in 2018, the percentage of adolescents engaging in MVPA 4 or more times per week, categorised by family affluence scale (FAS), was as follows: 56% for low FAS, 66% for medium FAS, and 74% for high FAS. By 2022, these figures had risen to: 58% for low FAS, 72% for medium FAS and 81% for high FAS. While overall MVPA levels increased, the rise was only 2 percentage



points in the low FAS category, compared to 7-percentage point increase in the high FAS category. This trend indicates a widening of SES inequalities from the pre-pandemic period to the post-pandemic period.




Gender Inequality:

The SHeS did not report data disaggregated by gender in line with the international benchmark. The HBSC Scotland survey revealed that in 2018, 64% of adolescents met the MVPA guideline, with 67% of boys and 62% of girls. By 2022, this was 71% with 77% boys and 65% of girls. An increase in daily MVPA was evident for both boys and girls, however, MVPA in boys increased by 10-percentage points, while MVPA in girls increased by only 3-percentage points, indicating a widening of gender inequalities.

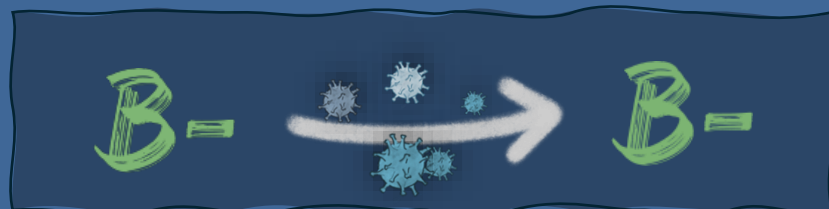


Gaps in Evidence:

The SHeS survey continues to lack measurement of MVPA, as stated in all SHeS reports, as highlighted in previous AHKS report [cards](#), and if it is used to measure MVPA, it overestimates MVPA by around 2 hours per day and is invalid (Basterfield et al., 2008). While the SHeS collects data on physical activity, it does not differentiate between intensity levels. Furthermore, there exists a gap in age coverage between available sources and established international benchmarks. The age ranges covered by the SHeS and the HBSC do not align with the WHO or UK or other international guidelines which extend to age 18. The application of adult PA guidelines to 16-18 year olds in the SHeS further complicates this issue. In summary, SHeS summarises data for 2-15 year olds when it should distinguish between 2 year olds, 3-4 year olds, and 5-18 year olds (three distinct physical activity guidelines), and the SHeS uses adult physical activity guidelines for 16-17 year olds, which is problematic (Basterfield et al., 2025).



Organised Sport and Physical Activity



AHKGA Benchmark:

% of children and youth who participate in organized sport and/or physical activity programmes. The benchmark includes sport AND exercise/physical activities, so this indicator is not solely sport, and the key word is 'organised' (i.e. the indicator is organised sport and physical activity). There is no recommendation for the frequency/duration of organised sport and physical activity participation.



	Pre-COVID-19		Post-COVID-19	
Grade	B-	we are succeeding with over half of children [60-66%]	B-	we are succeeding with over half of children [60-66%]

Grading Summary:


The Scottish Health Survey (SHeS) 2022 provides data on reported participation in sport and physical activity in the previous week for 2–15 year olds. Therefore, it is directly comparable with the 2020 pre-COVID-19 data (SHeS 2019). In 2022, the percentage of children and youth who reported participating in organised sport and/or PA programmes was 68%, compared to 66% in the SHeS (2019). This indicates no meaningful change in participation levels.

Socioeconomic Inequality:

The SHeS (2022) data highlights significant socioeconomic disparities in participation in organised sport and physical activity programmes. Among individuals in the least deprived quintile, 74% reported participation, compared to 54% in the most deprived quintile. This indicates that the odds of reporting participation were 1.37 times higher in the least deprived quintile than in the most deprived.

Comparing this to 2019, 82% of individuals in the least deprived quintile reported participation, versus 47% in the most deprived quintile. This suggests a potential narrowing of socioeconomic inequalities between pre- and post-COVID-19 periods.


Additional insights from the Public Health Scotland COVID-19 Early Years Resilience and Impact Survey (CEYRIS) found that attendance at free organised activities during summer holidays was higher among children from poorer families than those from wealthier families. However, CEYRIS



data were excluded from grading as they are not representative and do not reflect pre- to post-COVID-19 changes.

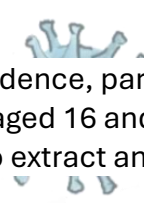
Gender Inequality:

Gender disparities in participation rates become more apparent with age. Among children aged 2–10 years, no significant differences were observed. However, from age 11 onward, boys consistently reported higher participation rates than girls. Overall, data for children aged 2-15 years old in 2022 showed 70% of boys reporting yes versus 66% of girls, reflecting a 4% difference. Comparable data from 2019 indicated 67% of boys versus 66% of girls reporting yes, suggesting no marked increase in gender differences overall.

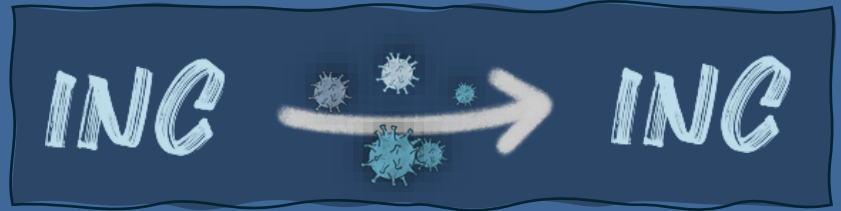


Gaps in Evidence:

There are notable gaps in the evidence, particularly for older adolescents (aged 16 years and above). The SHeS classifies individuals aged 16 and older as adults, merging their data with adult datasets. This practice makes it difficult to extract and analyse data specific to older adolescents.



Active Play



AHKGGA Benchmark:

% of children and youth who engage in unstructured/unorganized active play at any intensity for more than 2 hours per day; or % of children and youth who report being outdoors for more than 2 hours per day.


	Pre-COVID-19		Post-COVID-19	
Grade	INC	incomplete grade	INC	incomplete grade

Grading Summary:


There is limited evidence on active play in Scotland, and the data available cannot be used for grading. The Scottish Health Survey (SHeS) 2021 does not report time spent in active play in the main report or supplementary tables, although it is recorded. Number of days in active play is reported, but this does not align with the benchmark of hours of active play per day. The SHeS (2021) data are not comparable to previous years due to disruption caused to the survey during the onset of the pandemic. The 2020 SHeS did not record child data, and in the 2022 survey, both time spent in active play and number of days in active play were recorded but were not reported in the main report or supplementary tables and are not available to access via the UK Data Service. Considering the absence of sufficient supporting evidence on active play, a grade of INC was assigned for the COVID-19 report card.

Some surveys and reports have examined children's active play and outdoor activity levels during and after the COVID-19 pandemic in Scotland. However, these data sources vary in scope, methodology, and focus, making direct comparisons with the COVID-19 report card challenging. Many of these studies were disrupted by the COVID-19 pandemic and do not align with the Active Healthy Kids Global Alliance (AHKGGA) benchmarks used for grading. One such source, the Public Health Scotland COVID-19 Early Years Resilience and Impact Survey



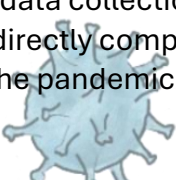


2020 (CEYRIS), examined changes in children's outdoor play during lockdown. However, its findings are not nationally representative, and the data reflect short-term pandemic-related fluctuations rather than broader trends in active play. Similarly, the SHeS (2021) recorded number of days in active play, this data by SES and gender is noted below. However, while we reference SHeS (2021) for some indicators, caution is needed due to disruptions in data collection during the pandemic.



Socioeconomic Inequality:


The SHeS (2021) data highlighted that 52% of children from the most deprived quintile engaged in active play daily, in comparison to 49% of children from the least deprived quintile. No marked inequalities by socioeconomic status were apparent in SHeS (2021) or previously, in SHeS (2018). However, due to disruptions in data collection, it is not possible to determine pre- and post-COVID-19 inequalities in a way that is directly comparable. Given these challenges, SES-related inequalities in active play before and after the pandemic cannot be graded.



Gender Inequality:

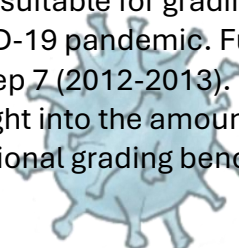
The SHeS (2021) data indicated that the percentage spending 0 days and 7 days in active play were:
Boys: 10% engaged in no active play, while 50% participated daily.

Girls: 13% of girls engaged in no active play and 43% engaged in active play on all 7 days of the week. Similar findings were reported in SHeS (2018), indicating that gender disparities in active play may have remained largely unchanged. However, changes in inequalities post-COVID-19 cannot be assessed.

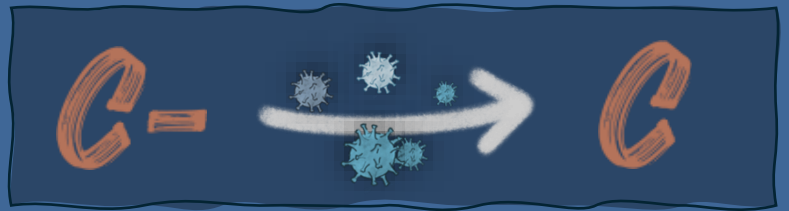


Gaps in Evidence:

As noted above, The SHeS does record time spent in active play but does not report the data and only the 2021 COVID-19 disrupted data are available via the UK Data Service. The British Children's Play Survey (2020) does meet the international benchmark criteria for grading and offers a comprehensive overview of active and outdoor play levels across the UK. However, due to the limited representation of Scottish children in the survey (174 participants) and the fact that parents were asked to report on pre-COVID active play, the data is unsuitable for grading purposes or for assessing active play in Scottish children following the COVID-19 pandemic. Furthermore, the Growing Up in Scotland survey has only recorded active play in Sweep 7 (2012-2013). Currently, there is no nationally representative survey in Scotland that provides insight into the amount of time children engage in active play, particularly in relation to the international grading benchmark of more than two hours per day.



Active Transportation



AHKGA Benchmark:

% of children and youth who use active transportation to get to and from places (e.g., school, park, mall, friend's house).

	Pre-COVID-19	Post-COVID-19
Grade	C- we are succeeding with about half of children [40%-46%]	C we are succeeding with about half of children [47%-53%]

Grading Summary:

The previous grade for active transportation was C- as Scottish survey data from the Hands Up Scotland Survey (HUSS), and Transport and Travel in Scotland; HBSC Scotland indicated that 40-46% of children and adolescents use active transport for travelling to school. In the HUSS (2022), results indicated that 49% of school pupils said they travel to school in an active way (walking, cycling, and scootering or skating). Furthermore, the Scottish Household Survey (SHS 2022) also found that 50% of children and adolescents walked to school. Therefore, a grade of **C** was assigned.

The three most recent Hands Up Scotland Surveys indicate a trend of decreasing active travel only to school (51% in 2020, 50% in 2021, 49% in 2022) but remains higher than the pre-pandemic active travel levels of 47% reported in 2019. However, it is important to highlight that the response rates to Hands Up Scotland have differed over this period as well (67% of all state school pupils in 2019, 57% in 2020, 58% in 2021 and 63% in 2022). The SHS (2022) highlighted that mode of travel to school was similar in 2022 to 2019 with no significant changes, with 50% walking and 1% cycling to school in 2022, and 52% and 2% in 2019 respectively.

Socioeconomic Inequality:

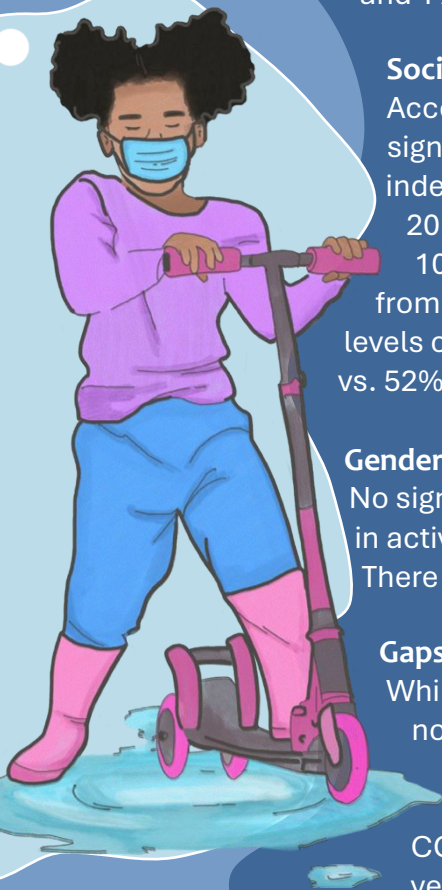
According to the Hands Up Scotland 2022 survey, state school pupils were significantly more likely to use active travel to school compared to those in independent (fee-paying) schools (49% vs. 20%, respectively). Between 2019 and 2022, active travel rates in the most deprived areas declined by 10 percentage points, whereas walking and cycling rates among pupils from high SES backgrounds remained stable. As a result, post-COVID-19 levels of active travel were similar between the two groups (56% for low SES vs. 52% for high SES in 2022, compared to 66% and 51%, respectively, in 2019).

Gender Inequality:

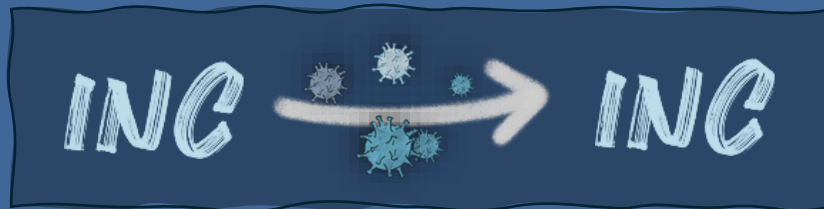
No significant differences between male and female children and adolescents in active travel to school: 52% for girls and 49% for boys (SHS 2022). There were no significant changes observed in gender related inequalities.

Gaps in Evidence:

While existing data provide insights into active transportation to school, notable gaps remain. There is little evidence on active commuting to destinations other than school, such as extracurricular activities or leisure locations. Furthermore, differences in response rates post-COVID-19 to the Hands Up Scotland Survey may limit the reliability of year-on year comparisons.



Physical Fitness



AHKGa Benchmark:

Characteristics that permit a good performance of a given physical task in a specified physical, social, and psychological environment. Data on physical fitness indicators (e.g. cardiorespiratory fitness, grip strength, balance etc) should be interpreted using sex-specific and age-specific European normative values published by Tomkinson et al. (2018).

	Pre-COVID-19	Post-COVID-19
Grade	<i>INC</i> incomplete grade	<i>INC</i> incomplete grade

Grading Summary:

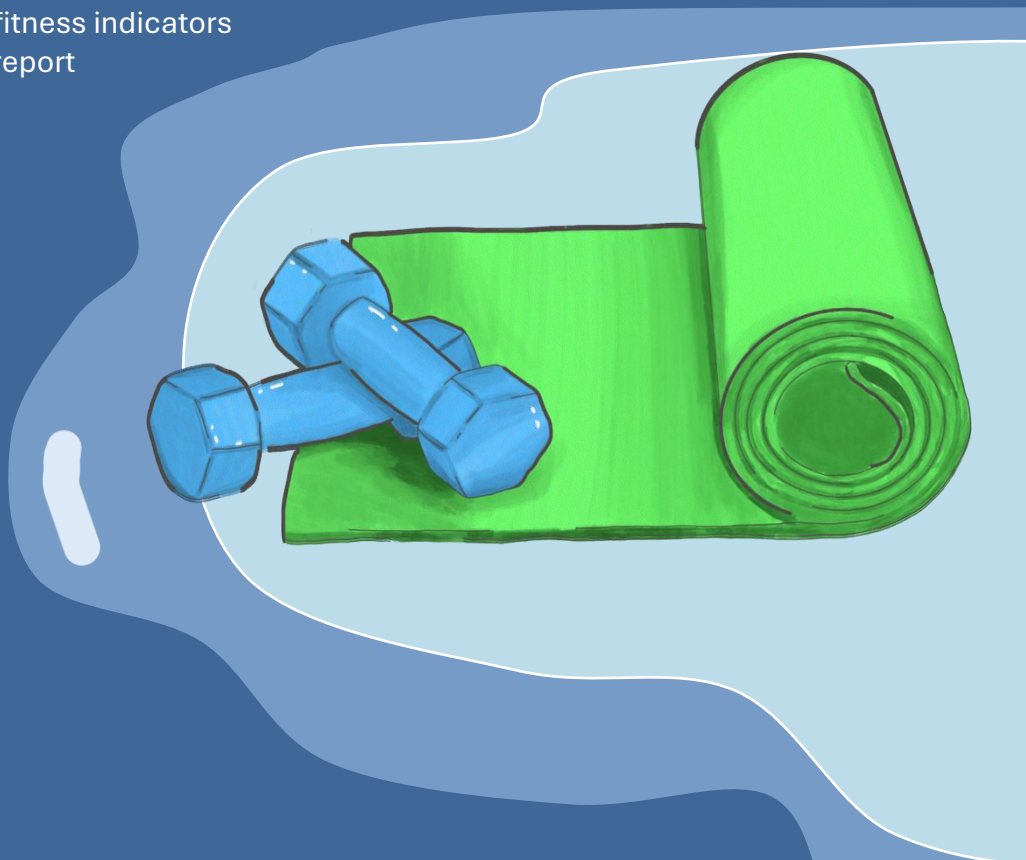
The grading for the current report card remains consistent with that of 2021 due to a continued lack of suitable evidence. An INC grade has been assigned due to the absence of nationally representative data on physical fitness among children and adolescents in Scotland. Commentary on changes overall, or by socioeconomic status and gender cannot be provided due to the unavailability of this data.

Inequalities:

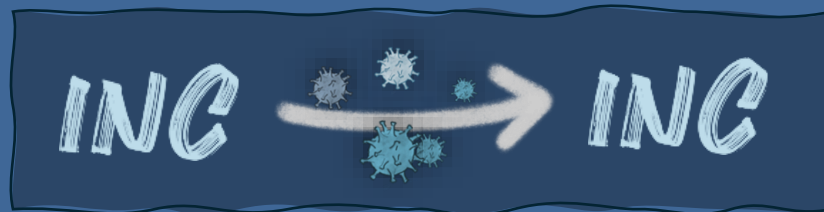
SES and gender inequalities in physical fitness could not be assessed due to the absence of surveillance data.

Gaps in Evidence:

The gaps in evidence for physical fitness indicators persist as highlighted in previous report cards.



Diet



AHKGA Benchmark:

% of children and adolescents consuming at least 5 portions of fruit and vegetables per day, % of children and adolescents meeting the Scottish Dietary Goals (SDGs) which were revised in 2016 (e.g. average intake of free sugars should not exceed 5% of total energy intake in children over 2 years, average intake of saturated fat should not exceed 11% of food energy intake (often equivalent to total energy in children)).

	Pre-COVID-19		Post-COVID-19	
Grade	<i>INC</i>	incomplete grade	<i>INC</i>	incomplete grade


Grading Summary:

The only available data against the international dietary benchmarks is the percentage of children and adolescents consuming five or more portions of fruit and vegetables per day. According to the Scottish Health Survey (SHeS) 2022, 21% of 2–15 year-olds met this guideline, with an average daily consumption of 3.2 portions. While this represents an improvement compared to previous years and is sufficient to meet the threshold for a D-grade (>20% consuming 5 or more portions daily), a grade could not be assigned due to the absence of data on other international benchmarks, such as intake of free sugars and saturated fat. Fruit and vegetable consumption was highest among younger children, and there was evidence of a gradual increase in intake between 2019 and 2022. However, overall consumption remains low, with significant room for improvement.

Socioeconomic Inequality:

The SHeS (2022) data revealed small differences in the percentage of children and adolescents meeting the 5-a-day benchmark by socioeconomic status: most Deprived Quintile: 23% met the benchmark, with an average of 3.1 portions per day, and 12% consumed no fruit or vegetables in the last 24 hours. Least Deprived Quintile: 21% met the benchmark, with an average of 3.4 portions per day, and 7% consumed no fruit or vegetables in the last 24 hours. In comparison, the SHeS (2019) reported that 16% of children in the most deprived quintile and 17% in the least deprived quintile met the 5-a-day guideline. However, average consumption was lower, with 2.8 portions per day in the most deprived and 3.3 portions per day in the least deprived group. Additionally, 14% of children in the most deprived quintile and 4% in the least deprived quintile reported consuming no fruit or vegetables in the previous 24 hours. These findings suggest a reduction in socioeconomic disparities post-COVID,






as the percentage meeting the international benchmark increased more in the most deprived group (+7 percentage points) than in the least deprived group (+4 percentage points).

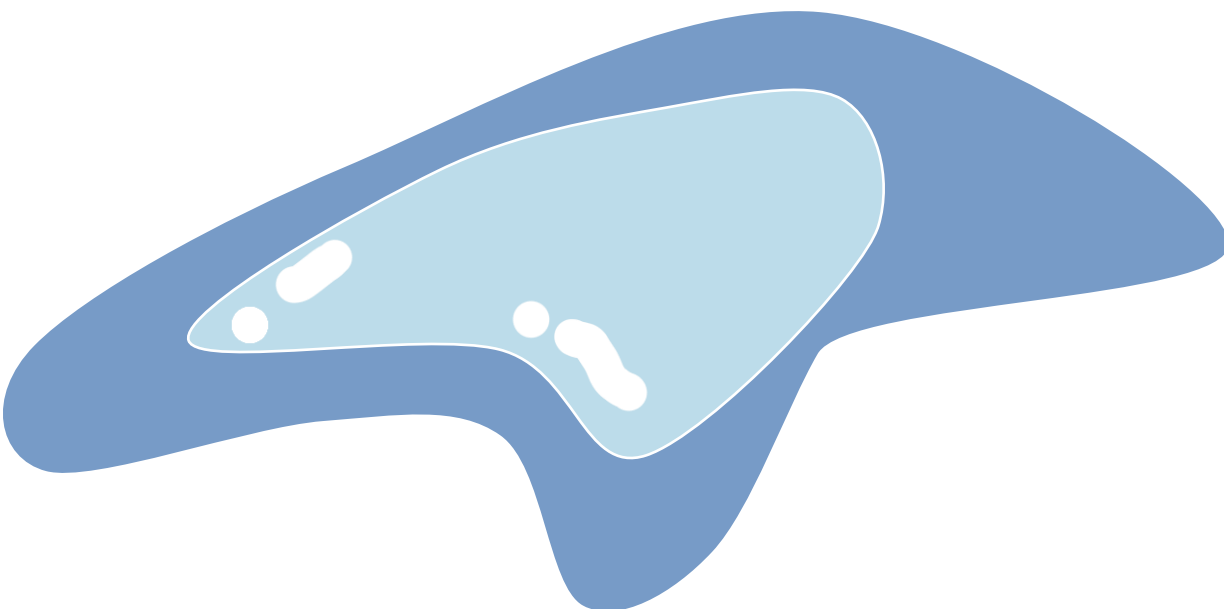
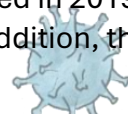


Gender Inequality

Regarding gender, in the SHeS (2022), there were very little differences in daily fruit and vegetable portions, with 20% of girls and 21% of boys consuming five or more portions per day and both genders consuming a mean of 3.2 portions. However, this did vary by age group, with a larger difference between boys and girls in the youngest age group. In 2019, it was noted that girls had consumed higher levels of fruit and vegetables per day than boys each year since 2008, with girls consuming an average of 3 portions per day compared to 2.6 portions per day consumed daily by boys in 2019 (SHeS 2019) and 16% of girls were meeting the guidelines compared to 12% of boys. Therefore, there was evidence that intakes had improved more in boys than girls and of a reduction in differences between boys and girls.



Gaps in Evidence:

As with the previous report card, the only data available to monitor against the international benchmarks is the percentage of children consuming at least 5 portions of fruit and vegetables per day from the SHeS. Methods for data collection also changed during this period from face-to-face to telephone interviews. The National Diet and Nutrition Survey ([NDNS](#)) offers comprehensive data on food and nutrient intake among children. However, NDNS data for Scotland are not available separately and the percentage of children and adolescents meeting or exceeding Scottish Dietary Goals is not reported. Furthermore, the most recent NDNS data available at the time of the grading were collected in 2019, and had not been updated post-COVID, and therefore could not be used for grading. In addition, the dietary assessment methods changed pre- and post-COVID.

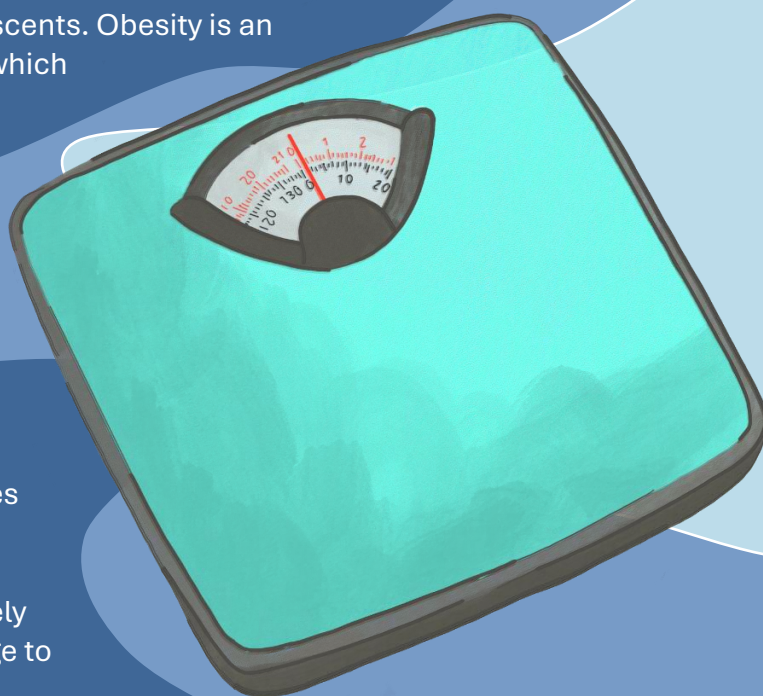


Obesity

INC → INC

AHKA Benchmark:

% (prevalence) of obesity in children and adolescents. Obesity is an excess of body fatness (a level of body fatness which increases risk of disease) and so, ideally, the prevalence of obesity should be estimated based on body fatness measures from national surveys. In Scotland, as in most other countries, body fatness is not measured and a simpler proxy for body fatness, the Body Mass Index (BMI) for age, is used to estimate prevalence of obesity. Systematic reviews and SIGN guidelines have shown that BMI-for-age has low-moderate sensitivity for detection of children and adolescents with high body fatness (a moderately high false negative rate) and so using BMI-for-age to estimate obesity prevalence is conservative.



	Pre-COVID-19	Post-COVID-19
Grade	INC incomplete grade	INC incomplete grade


Grading Summary:

Gaps and problems with obesity surveillance in children and adolescents in Scotland are highlighted in [previous report cards](#) and have not changed, therefore this indicator could not be graded. In the Scottish Health Survey (SHeS) 2022, 18% of children aged 2-15 had obesity, this is higher than in 2019 (16%) and the highest level since SHeS began in 1998. Obesity prevalence increased with age, from 15% among 2-6 year olds to 20% among 12-15 year olds. The [P1 BMI National Statistics Scotland](#) measurement data also suggested a slight increase in obesity in children from 10% in 2018/2019 to 12% in 2021/2022.

Socioeconomic Inequality:

Comparison of socioeconomic disparities based on SHeS data from 2019 to 2022 reveals persistent inequalities in childhood overweight and obesity rates, although there was a suggestion of a reduction in inequalities over this period. In the SHeS (2019), 24% of children in the most deprived SIMD quintile had obesity, compared to 8% in the least deprived quintile – a disparity of 16 percentage points. By 2022: these figures shifted to 23% and 20% respectively, narrowing the gap to 3 percentage points. This reduction was largely driven by a significant increase in obesity prevalence among the least deprived group.

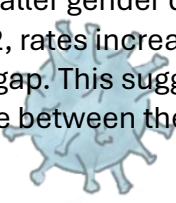
The 2021/2022 [P1 BMI Statistics Scotland measurement data](#), obesity rates were 16% in the most deprived quintile and 7% in the least deprived quintile, compared to 14% and 6% in 2018/2019,



respectively. The P1 data suggested a slight widening in inequalities, due to a greater increase in prevalence in the most deprived group. These two data sources showed different patterns for changes by SES, but as SHeS data of obesity rates across SIMD quintiles broken down by age have not been published, it is difficult to conclude whether the patterns may have been similar amongst this age group in the SHeS.

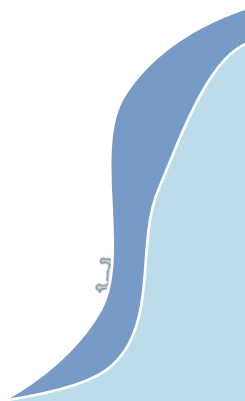
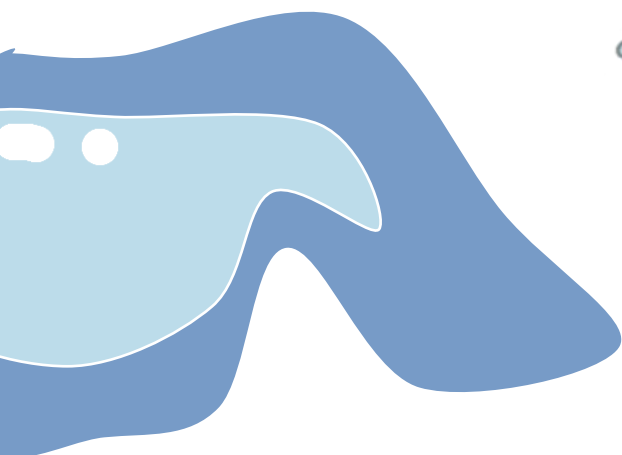

Gender Inequality:

In the SHeS (2019), 17% of boys and 15% of girls had obesity. By 2022, obesity prevalence among boys remained stable at 17%, while rates among girls increased to 19%, leading to a narrowing of the gender gap and a higher prevalence among girls than boys. The P1 BMI National Statistics Scotland measurement data showed smaller gender disparities: In 2018/2019, obesity rates were 11% for boys and 10% for girls. By 2021/2022, rates increased slightly to 12% for boys and 11% for girls, with no notable changes in the gender gap. This suggested the same slight increase in both boys and girls, with no change in the difference between the sexes.

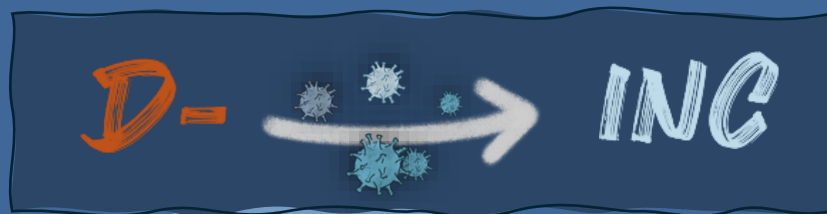


Gaps in Evidence:

There were similar limitations to data as previous report cards with regards to cut-offs used for monitoring and age groups included. The SHeS methods of data collection changed during this time from measured in 2019 to self-reported in 2021 to measured in 2022, with no data collected in 2020 and therefore comparisons are made between 2019 and 2022 data. The P1 data collection was interrupted during COVID-19, and reduced numbers were monitored in 2019/2020 and 2020/2021, therefore comparisons are made between 2018/2019 and 2021/2022 data.



Family and Peers



AHKGA Benchmark:

% of family members (e.g., parents, guardians) who facilitate physical activity (PA) and sport opportunities for their children (e.g., volunteering, coaching, driving, paying for membership fees and equipment); Or % of parents who meet the Global Recommendations on Physical Activity for Health, which recommend that adults accumulate at least 150 min of moderate-intensity aerobic physical activity throughout the week or do at least 75 min of vigorous-intensity aerobic physical activity throughout the week or an equivalent combination of moderate- and vigorous-intensity physical activity; Or % of family members (e.g., parents, guardians) who are physically active with their kids; Or % of children and youth with friends and peers who encourage and support them to be physically active; Or % of children and youth who encourage and support their friends and peers to be physically active. Since child and adolescent diet and obesity are indicators in the Scottish report card, we have extended the benchmarks for the Active Healthy Kids Global Alliance Global Matrix 3.0 to also include estimates of parental diet and overweight/obesity. Adult data are used as a proxy for parental influence and the nature of the socio-ecological environment at the family level. This included: % of adults who met the adult physical activity guidelines, % of adults with overweight and obesity, % of adults who met the 5- a-day fruit and veg recommendation; % of adults reporting frequent participation in sport and physical activity and reporting volunteering in sport and physical activity.

	Pre-COVID-19		Post-COVID-19	
Grade	D-	we are succeeding with less than half of children [20-26%]	INC	incomplete grade

Grading Summary:

The assessment of adult diet in 2022 utilised data from the adult 2019 Scottish Health Survey (SHeS), as data for adult fruit and vegetable intake was not included in the SHeS (2022). The prevalence of meeting combined MVPA, VPA and muscle and bone strengthening activity, adult prevalence was 29% in the SHeS (2019), and remained unchanged at 28% in the SHeS (2022). Adult overweight and obesity, conservatively assessed using BMI criteria, was 66% in the SHeS (2019) and 63% in the SHeS (2022). Sedentary behaviour (screen time) in adults on average 6.2 hours/day on weekdays and 5.4 hours/day on weekends in 2019. In 2022, comparisons are made with previous data, however, data focuses on sitting time rather than screen time. Regarding adult participation in sport and PA in the last 28 days, the prevalence was 80% in SHeS (2019) and 82% in SHeS (2022), showing no substantial change. In contrast, **adult volunteering in sport or PA** was reported at an overall prevalence of 15% in SHeS (2022), showing no variation by SES, with a much lower prevalence of 4% in 2019. Due to a loss of post-COVID-19 surveillance data, it was difficult to grade this indicator as the comparability of pre- and post-COVID-19 data remains questionable.

Socioeconomic Inequality:

Diet: inequalities cannot be evaluated as there is no data available from SHeS (2022). **Meeting MVPA and muscle/bone strengthening guidelines combined:** variation by SES was not reported in the SHeS surveys. **Adult overweight and obesity prevalence:** There was a reduction in SES inequality in overweight and obesity in adults, from 11 percentage point difference in 2019 (60% least deprived vs 71% most deprived) (SHeS 2019) to a 7-percentage point difference in 2022 (56% least deprived vs 63% most deprived) (SHeS 2022). **Recreational screen time:** Comparability between SHeS (2019) and 2022 data remains unclear, as previously noted. **Participation in sport and PA in the last 28 days:** SHeS (2022) reported 82% participation from the least deprived compared to 63% among the most deprived by SIMD. Equivalent data from 2019 are unavailable for direct comparison. **Volunteering in sport and PA:** In SHeS (2022), volunteering in sport and PA was 14% in the most deprived quintile versus 15% in the least deprived quintile, with no discernible difference. However, data by SIMD in 2019 are not available for comparison.

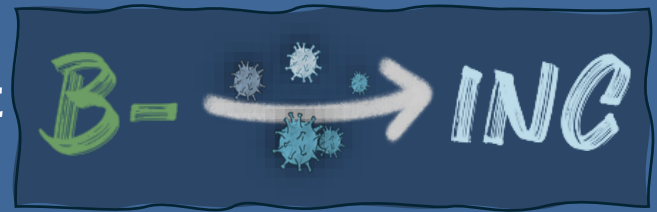
Gender Inequality:

Diet: inequalities cannot be assessed due to the absence of SHeS (2022) data, as noted above. **Meeting MVPA and Muscle/Bone Strengthening Guidelines combined:** 32% in men versus 25% in women met the combined guidelines, making men 1.28 times more likely than women to meet these guidelines in SHeS (2022). In comparison, in SHeS (2019), 31% of men versus 27% of women met both guidelines, indicating men were 1.15 times more likely than women to meet them. **Overweight and obesity prevalence:** there was an increase in gender inequality in overweight and obesity rates from a 6-percentage point difference in 2019 (69% men, 63% women), to a 9-percentage point difference in 2022 (67% men, 58% women).

Gaps in Evidence:

There is an apparent lack of post-COVID-19 dietary data that is directly comparable to pre-COVID-19 data. Many indicators from SHeS (2022) are not comparable to those from SHeS (2019), making it difficult to assess changes in inequality over time. This challenge arises from several issues: changes in measurement methodology, the removal or omission of certain measures, relevant data not being made available in supplementary tables or removed entirely from the website (e.g., SIMD data from SHeS 2019). These limitations significantly hinder the ability to evaluate changes in inequalities reliably across the pre- and post-COVID-19 periods.

Community and Environment



AHKGA Benchmark:

% of children or parents who perceive their community/municipality is doing a good job at promoting physical activity (e.g., variety, location, cost, quality), % of communities/municipalities that report they have policies promoting physical activity, % of communities/municipalities that report they have infrastructure (e.g., sidewalks, trails, paths, bike lanes) specifically geared toward promoting physical activity, % of children or parents who report having facilities, programs, parks and playgrounds available to them in their community, % of children or parents who report living in a safe neighbourhood where they can be physically active, of children or parents who report having well- maintained facilities, parks and playgrounds in their community that are safe to use.



	Pre-COVID-19		Post-COVID-19	
Grade	B-	we are succeeding with over half of children [60%-66%]	INC	incomplete grade

Grading Summary:

No relevant data were collected in the Health Behaviour in School-aged Children (HBSC) Scotland 2022 survey or the Scottish Health Survey (SHeS 2022). The six questions previously included in the SHeS regarding access to and safety of play areas were removed from the survey. Additionally, while the Public Health Scotland COVID-19 Early Years Resilience and Impact Survey (CEYRIS) dataset (birth to 11 years) may include some relevant information on pre- and post-COVID-19 changes in accessibility and safety of outdoor spaces, this data was not reported in the currently available CEYRIS publications. Furthermore, the CEYRIS sample was not representative of the population.

Inequalities:

While the Public Health Scotland CEYRIS dataset provides insights into disparities during the COVID-19 period—such as the higher access to private or enclosed garden spaces among high-income families compared to low-income families—it does not offer a basis for assessing long-term trends in inequalities. Additionally, data on pre- and post-COVID-19 changes by socioeconomic status (SES) or gender remain unclear, and the CEYRIS findings do not align with the Active Healthy Kids Global Alliance (AHKGA) benchmarks. As a result, this data could not be graded.

Due to the absence of relevant data, the assessment of inequalities or changes in inequalities from pre- to post- COVID-19 by either SES or gender is not possible.

Gaps in Evidence:

No data were available to grade this indicator for the pre-COVID-19 report card or the post-COVID-19 report card and this indicator has been dropped from Scottish public health surveillance since 2018.

Government: Physical Activity

AHKGA Benchmark:

For this COVID-19 card, a unique approach was used to evaluate government and policy responses. Unlike other indicators, which adhered to pre-established benchmarks, this assessment focused on policy adaptations during the pandemic to address physical activity challenges, particularly for vulnerable populations. A pragmatic use of the HEPA PAT v2 and scoring rubric by Ward et al. (2021) was applied so that only criteria such as supporting actions, accountable organisations, reporting structures, funding, and monitoring and evaluation plans were retained. Specifically, allocated funds and resources for the implementation of physical activity promotion strategies and initiatives for all children and youth, demonstrated progress through the key stages of public policy making (i.e., policy agenda, policy formation, policy implementation, policy evaluation and decisions about the future). Each policy document was assessed against these criteria, with proportions calculated to inform grades for physical activity.


	COVID-19 Response
Grade	

Grading Summary:

A grade of A- was assigned following the assessment of relevant policy documents and website links. The evidence of leadership and commitment to providing PA opportunities for all children and youth was persistent. This is evident through sustained funding and the continuation or expansion of effective pre-existing policies during the pandemic. Scotland's Play Strategy Progress Review (2021) alongside the Children and Young People's Consultation (2021): Play in a COVID-19 Context, both built upon the Play Strategy for Scotland and Action Plan (2013), highlighting the persistence of strong foundational policies. Substantial funding, with relevant detail regarding where the funding will be allocated, (e.g., across local authorities) appears to have had a positive impact on children's play, physical activity, and opportunities for safe active travel. The evidence of leadership and commitment to increasing levels of play, physical activity, and providing physical activity opportunities for children and youth is abundantly. The allocation of funds and resources for implementation of policy has continued clearly (e.g., the renewal of Scotland's Play Parks is rooted in the Programme for Government for 2021-2022 and has since seen increased and substantial funding over years to come).

Progress was evident across key stages of public policymaking including policy agenda setting, policy formation, implementation, and evaluation. Significant improvements were observed in the policy documents published during the pandemic, which demonstrate a stronger focus on adaptability and responsiveness. These developments pave the way for future policies and programmes to build on positive changes made in response to the pandemic, some of which are notable already but not considered in this report card (e.g.,

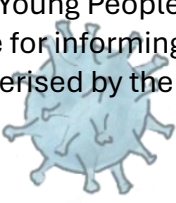





the Summer holiday food, activities and childcare programme: guidance for local authorities which has already had a published quantitative evaluation, and the Spaces for People initiative which has a series of lessons learned.)

Gaps in Evidence:


It is important to acknowledge the dissonance between policy and surveillance of different indicators (e.g., Active Play which has a good deal of policy but no meaningful surveillance) and the absence of policies published that focussed on other important behaviours (e.g., sedentary recreational screen time, especially during a time where screen time was already increased with the change in learning environment and increased – mandated – time at home). However, it is noted that recently a Place Standard Tool for Children and Young People has been developed. Results from the implementation of this initiative would be valuable for informing future policy priorities. Lastly, it is also acknowledged that the pandemic was characterised by the persistent need of juggling important and/or more urgent issues.



Government: Diet

AHKGA Benchmark:

Unlike other indicators, which adhered to pre-established benchmarks, this assessment focused on policy adaptations during the pandemic to address diet challenges, particularly for vulnerable populations. A modified version of the HEPA PAT v2 and the scoring rubric by Ward et al. (2021) was applied, excluding "number and breadth of relevant policies" but retaining criteria such as supporting actions, accountable organisations, reporting structures, funding, and monitoring and evaluation plans. Specifically, allocated funds and resources for strategies and initiatives to improve diet and tackle childhood obesity, demonstrated progress through the key stages of public policy making (i.e., policy agenda, policy formation, policy implementation, policy evaluation and decisions about the future). Each policy document was assessed against these criteria, with proportions calculated to inform grades for diet.

	COVID-19 Response
Grade	

Grading Summary:

Policies during the COVID-19 pandemic focussed on immediate urgent issue of reducing impacts on access to specifically amongst low-income families, rather than being improving the healthiness of diets or tackling childhood obesity. These policies had clear actions in terms of this with clearly identified funding and identified responsible organisations, which was an improvement compared to pre-COVID-19 policies, however, several lacked details on reporting structures and plans for monitoring and evaluation, similar to pre-COVID. Unlike pre-COVID, where more policy documents were identified with a focus on physical activity compared to diet, during COVID-19 there were more policy documents related to diet than to physical activity, although many of these were linked to each other.

There was clear evidence of policies with a focus on minimising inequalities with regards to the impact of COVID-19, with a focus on minimising the impact on diets in the most vulnerable groups in society. For children, this included addressing food poverty and insecurity and ensuring continued provision for those eligible for free school meals. While clear actions and funding allocations were outlined, the distribution of funding varied across local authorities. This variation sometimes limited the effectiveness of the policies, as the actions taken did not always translate into providing healthy food options.


Many of the identified documents were not full policy documents but rather focused on immediate actions to mitigate the impacts of the pandemic. This likely explains the lack of detailed reporting structures and



the


food

focussed on




monitoring and evaluation plans. However, in cases where these elements were present, they were relatively thorough and well-articulated.

Diet policies used for grading: Supporting communities funding, which included Coronavirus Food Fund, and associated Food Standards Scotland Guidance, Free School Meals Extended, Funding for Those Who Need it Most, COVID-19 guidance on tackling financial insecurity over winter, Food insecurity and poverty –UN: Scottish Government response, School age childcare progress report, Scottish child bridging payments, Get into summer, Local action to tackle food insecurity.



Gaps in Evidence:

None of the new policies identified during this period were specifically focussed on improving the healthiness of diets nor tackling childhood obesity, as the focus was on the immediate urgent need to reduce impacts on access to food especially amongst vulnerable groups. However, although not used in the current grading, previously implemented policies focussing on improving diets or reducing childhood obesity covered in previous report cards were also still relevant during this period.

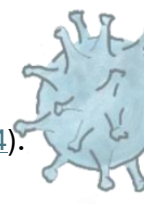




Summary of Measurement Methods

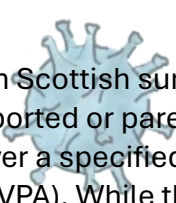
Sedentary Behaviour:

Data on sedentary behaviour in Scottish surveys rely primarily on self-reported or parent-reported measures of recreational screen use, such as TV viewing, gaming, and social networking. These methods are prone to underestimation due to recall bias and social desirability ([Beynon et al., 2024](#)). No Scottish surveys comprehensively measure screen stacking (simultaneous screen use) or objectively measure total screen exposure, which limits the ability to assess the true extent of screen time.




Overall Physical Activity:

Most data on physical activity in Scottish surveys, including the Scottish Health Survey (SHeS) and HBSC Scotland, rely on self-reported or parent-reported measures. These ask children or parents to recall physical activity levels over a specified period, such as the number of days achieving moderate-to-vigorous physical activity (MVPA). While these measures are practical for large-scale surveys, they are subject to recall bias and social desirability bias, which may lead to overestimation of activity levels. Objective measures like accelerometry are rarely used, limiting the accuracy of estimation. Additionally, the SHeS does not distinguish between different intensities of physical activity.



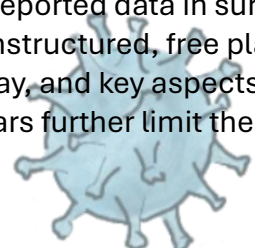
Organised Sport and Physical Activity:

Participation in organised sport is measured through self-reported or parent-reported surveys such as the SHeS and HBSC Scotland. These surveys collect data on the frequency of involvement in organised physical activities (e.g., sports clubs, after-school programmes). While practical for large-scale studies, self-report methods can lead to overreporting. Additionally, these surveys often lack detail on the duration, intensity, and type of activities.



Active Play:

Active play is assessed through self-reported data in surveys like the SHeS, which focus on the number of days children engage in unstructured, free play. However, there is no standardised methodology for measuring active play, and key aspects such as time spent are not captured. Data collection inconsistencies across years further limit the ability to track trends in active play accurately.



Active Transportation:

Active transportation data (e.g., walking, skating, scooting or cycling to school) come from surveys such as the Hands Up Scotland Survey (HUSS) and SHeS, relying on self-reporting by children or parents. These surveys are generally consistent year-to-year.

Physical Fitness:

No surveillance data available in Scotland on physical fitness.


Diet:

Dietary data in Scotland primarily come from the Scottish Health Survey (SHeS), which uses self- or parent-reported 24-hour recall to assess fruit and vegetable consumption. The Health Behaviour in School-Aged Children (HBSC) survey collects similar data for adolescents but does not include portion sizes, limiting its applicability to international benchmarks like the 5-a-day guideline. The National Diet and Nutrition Survey (NDNS) provides more detailed dietary information but lacks recent, Scotland-specific data. While these surveys offer insights into dietary patterns, they often lack the scope needed to align fully with international benchmarks.



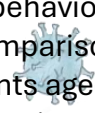
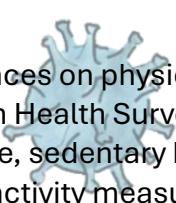
Obesity:

Obesity data in Scotland primarily come from the Scottish Health Survey (SHeS) and the Primary 1 National Statistics Scotland measurement data, which use measured height and weight to calculate Body Mass Index (BMI). However, for adolescents aged 16–18, the SHeS applies adult BMI thresholds, which underestimate obesity prevalence because they fail to account for age-specific growth patterns. BMI itself has moderate sensitivity, meaning some children classified as healthy weight may still have excess body fat. This impacts the accuracy of obesity prevalence estimates in older adolescents. The data sources used BMI \geq 85th percentile to define overweight and obesity and BMI \geq 95th percentile to define obesity.



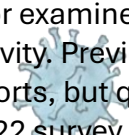
Family and Peers:

Data for family and peer influences on physical activity and diet were primarily collected through self-reported surveys in the Scottish Health Survey (SHeS). These surveys assessed adult physical activity levels, fruit and vegetable intake, sedentary behaviour, and participation in or volunteering for sport and physical activity. Physical activity measures included self-reported frequency of MVPA, vigorous physical activity, and muscle and bone strengthening activities. Sedentary behaviour data transitioned from screen time (2019) to sitting time (2022), complicating comparisons. BMI was calculated from measured height and weight, but BMI cut-offs for adolescents aged 16–18 were incorrectly aligned with adult values, underestimating obesity prevalence in this age group.



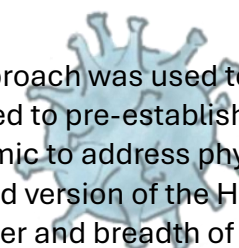
Community and Environment:

This indicator examines perceived safety, access to, and availability of outdoor and indoor spaces for physical activity. Previously, the Scottish Household Survey (SHeS) provided estimates through parental reports, but questions on this topic were removed in recent surveys. Similarly, the HBSC Scotland 2022 survey did not collect relevant data. While the CEYRIS survey may include insights into changes in accessibility and safety of outdoor spaces, the available data was not representative and insufficient for grading.




Government and Policy:

For this COVID-19 card, a unique approach was used to evaluate government and policy responses. Unlike other indicators, which adhered to pre-established benchmarks, this assessment focused on policy adaptations during the pandemic to address physical activity and diet challenges, particularly for vulnerable populations. A modified version of the HEPA PAT v2 and the scoring rubric by Ward et al. (2021) was applied, excluding "number and breadth of relevant policies" but retaining criteria such as supporting actions, accountable organisations, reporting structures, funding, and monitoring and evaluation plans. Each policy document was assessed against these criteria, with proportions calculated to inform grades for both physical activity and diet.




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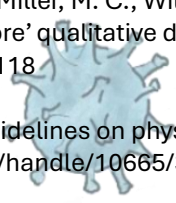
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