PHYSICAL ACTIVITY ALLIANCE

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The 2022 United States Report Card on Physical Activity for Children and Youth

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2022 U.S. REPORT CARD ON PHYSICAL ACTIVITY FOR CHILDREN AND YOUTH OBJECTIVE

The 2022 United States (U.S.) Report Card is the fourth comprehensive assessment of physical activity in U.S. children and youth, updating the Report Cards released in 2014,[1] 2016,[2] and 2018.[3] The primary goal of the 2022 U.S. Report Card is to assess the levels of physical activity and sedentary behaviors in American children and youth, facilitators and barriers for physical activity, and health outcomes related to physical activity.

The tracking of physical activity indicators over time is an important surveillance tactic that allows for an assessment of population-level changes in behavior. The Report Card is a resource that summarizes health statistics related to physical activity levels among children and youth in the U.S. More importantly, the Report Card is an advocacy tool that provides a level of accountability and call-to-action for decision makers regarding how we, as parents, teachers, health professionals, community leaders, and policy makers, can implement new initiatives, programs, and policies in support of healthy environments to improve the physical activity levels and health of our children and youth.

Given the dramatic changes in children's lifestyle habits as the result of restrictions imposed by the COVID-19 pandemic, the 2022 Report Card primarily focuses on trends between 2018 and the start of the pandemic. However, a section has also been included that specifically addresses the impact of the pandemic on children's health to highlight the urgency required to address these changes and get our kids "back on track".

ABOUT THE PHYSICAL ACTIVITY ALLIANCE

The U.S. Report Card Research Advisory Committee responsible for developing this report is a sub-committee of the Physical Activity Alliance, a 501(c)(3) nonprofit organization. The Physical Activity Alliance is committed to leading efforts to create, support, and advocate policy and system changes that enable all Americans to enjoy physically active lives. Three national organizations (the National Physical Activity Plan Alliance, the National Physical Activity Society, and the National Coalition for Promoting Physical Activity) merged as the foundation for the Physical Activity Alliance, which promotes policies and systems to help make the active choice the easy choice. To this end, the Physical Activity Alliance and its partners are responsible for the development and dissemination of the National Physical Activity Plan. A Board of Directors, composed of representatives of organizational partners and at-large experts on physical activity and public health, governs the Physical Activity Alliance and at-large experts on physical activity and public health (see the website link below for a complete list of partners).

About the National Physical Activity Plan

The National Physical Activity Plan (NPAP) is a comprehensive set of policies, programs, and initiatives that aim to increase physical activity in all segments of the American population. It is the product of a private-public sector collaborative. Hundreds of organizations are working together to change communities in ways that will enable every American to be sufficiently physically active. With the NPAP, the Physical Activity Alliance aims to create a national culture that supports physically active lifestyles. Its ultimate purpose is to improve health, prevent disease and disability, and enhance quality of life.

The NPAP has a vision: **One day, all Americans will be physically active, and they will live, work, and play in environments that encourage and support regular physical activity**.

The first U.S. NPAP was released in 2010 and it was recently updated and re-released in 2016 with the addition of faith-based settings and sport as new societal sectors. The newest societal sector, military settings, was added in 2022. Societal sectors are areas of opportunity for physical activity promotion that provide the infrastructure for the Plan (https://paamovewithus.org/national-physical-activity-plan/).

The NPAP is comprised of recommendations that are organized into ten societal sectors:

- Business and Industry
- Community Recreation, Fitness, and Parks
- Education
- Faith-based Settings
- Healthcare
- Mass Media
- Military Settings
- Public Health
- Sport
- Transportation, Land Use, and Community Design

Each sector presents strategies for promoting physical activity. Each strategy outlines specific tactics that communities, organizations, agencies, and individuals can use. Recognizing that some strategies encompass multiple sectors, the NPAP has several overarching priorities focusing on initiatives that aim to increase physical activity.

For more information on the Physical Activity Alliance and the National Physical Activity Plan, visit: https://paamovewithus.org/.

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ABOUT THE ACTIVE HEALTHY KIDS GLOBAL ALLIANCE

The U.S. Report Card on Physical Activity for Children and Youth is a member of the Active Healthy Kids Global Alliance (www.activehealthykids.org/).

The Active Healthy Kids Global Alliance is a network of researchers, health professionals and stakeholders who are working together to advance physical activity in children and youth from around the world. The Active Healthy Kids Global Alliance is committed to powering the global movement to get kids moving through thought leadership, knowledge translation and mobilization, capacity building, and advocacy. This is facilitated by sustainable partnerships and cross-sectoral collaborations that enable best-practice exchanges, networking, and cross-fertilization.

The Active Healthy Kids Global Alliance was established in 2014, following the success of the world's first Global Summit on the Physical Activity of Children in Toronto, Canada. In 2014, 15 countries, including the U.S., participated in the Global Matrix 1.0,[1,4] releasing a set of physical activity report cards using a standard set of indicators. The Global Matrix 2.0 included 38 countries, and was released in conjunction with the 2016 Physical Activity and Public Health Congress in Bangkok, Thailand.[2,5] The Global Matrix 3.0 was inclusive of 49 countries, and it was released at the 2018 Movement to Move conference in Adelaide, Australia.[3] The 2022 U.S. Report Card on Physical Activity for Children and Youth is participating in the Global Matrix 4.0 along with more than 56 other countries.

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METHODOLOGY

The Report Card Research Advisory Committee, a sub-committee of the Physical Activity Alliance, included experts in diverse areas of physical activity and health behaviors from academic institutions and partner organizations across the country. The Report Card Research Advisory Committee was charged with the development and dissemination of the U.S. Report Card, which included determining which indicators to include, identifying the best available data sources, and assigning a letter grade to each indicator based on the best available evidence.

Indicators

The Report Card Research Advisory Committee selected 10 indicators related to physical activity in children and youth: (1) overall physical activity, (2) active transportation, (3) organized sport participation, (4) active play, (5) sedentary behavior, (6) sleep, (7) health-related fitness, (8) family and peers, (9) schools, and (10) community and the built environment. In addition to the graded indicators, information on selected Government Strategies and Investments is provided.

Data from multiple nationally representative surveys were used to provide a comprehensive evaluation of physical activity for children and youth. Each grade reflects how well the U.S. is succeeding at providing children and youth opportunities and/or support for physical activity. Table 1 presents the standard rubric the Committee used to determine a grade for each indicator.

Table 1. Report card grading rubric.*

Grade	Interpretation	Benchmark
A	We are succeeding with a large majority of children and youth (≥80%)	A+ = 94-100% A = 87-93% A- = 80-86%
B	We are succeeding with well over half of children and youth (60-79%)	B+ = 74-79% B = 67-73% B- = 60-66%
C	We are succeeding with about half of children and youth (40-59%)	C+ = 54-59% C = 47-53% C- = 40-46%
D	We are succeeding with less than half but some children and youth (20-39%)	D+ = 34-39% D = 27-33% D- = 20-26%
F	We are succeeding with very few children and youth (<20%)	F = 0-19%
INC	Incomplete—insufficient or inadequate information to assign a grade	

**Developed by the Active Health Kids Global Alliance*

PHYSICAL ACTIVITY GUIDELINES FOR CHILDREN AND YOUTH

The *Physical Activity Guidelines for Americans, 2nd Edition*[6] recommend that children and youth ages 6 to 17 years participate in 60 minutes (1 hour) or more of moderate-to-vigorous intensity physical activity every day of the week.

They recommend the 60 minutes include:[6]

- **Aerobic Activity**: Most of the daily 60 minutes should be either moderate or vigorous aerobic physical activity that makes children breathe hard and sweat. Children should include vigorous intensity aerobic activity on at least 3 days of the week.
- **Muscle-Strengthening Activity**: The 60 daily minutes should include muscle-strengthening activities on at least 3 days of the week.
- **Bone-Strengthening Activity**: The 60 daily minutes should include bone-strengthening activities on at least 3 days of the week.

Table 2. Examples of moderate- and vigorous-intensity aerobic, muscle-strengthening, and bone-strengthening activities for children and youth[7]

Type of Physical Activity	Example Activities
Moderate-to-Vigorous Intensity Aerobic	• Hiking • Biking and Skateboarding • Walking and running • Rock climbing • Martial arts such as karate or taekwondo • Playing sports such as golf, gymnastics, basketball, soccer, or football
Muscle-Strengthening	• Climbing trees • Lifting weights • Playing on playground equipment
Bone-Strengthening	• Running • Jumping rope • Playing hopscotch • Skipping • Weight-bearing sports such as gymnastics or tennis

Figure 1. 60 Minutes of Physical Activity Every Day of the Week

SUMMARY OF 2022 REPORT CARD INDICATORS AND GRADES

Indicator	Grade
Overall Physical Activity	D-
Active Transportation	D-
Organized Sport Participation	C
Active Play	INC
Sedentary Behaviors	D
Sleep	C+
Physical Fitness	C-
Family and Peers	INC
School	D-
Community and Built Environment	C

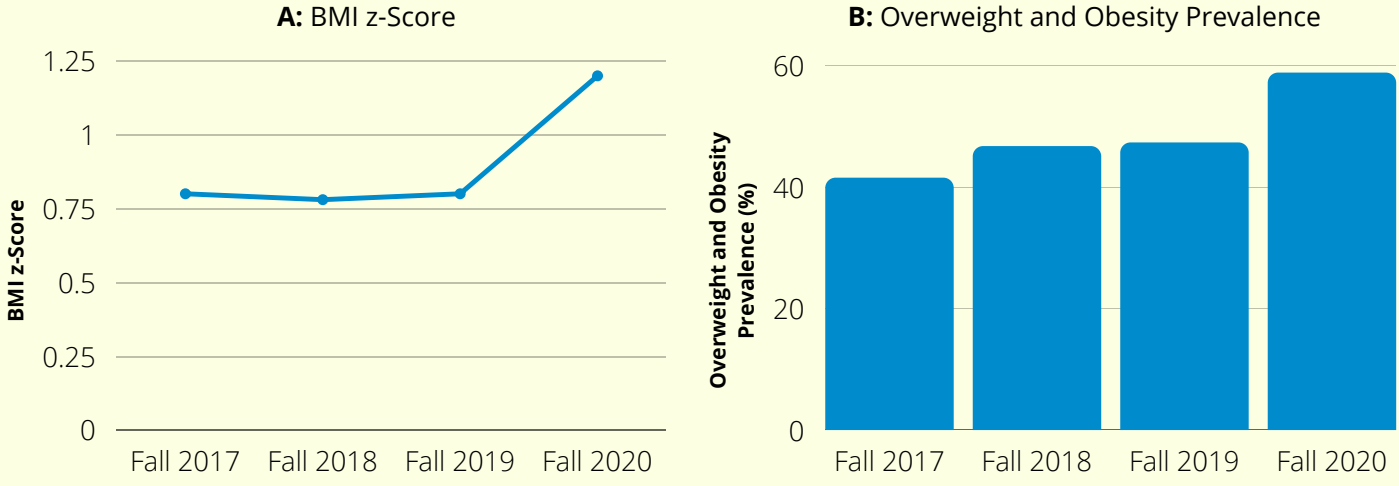
COVID-19 AND PHYSICAL ACTIVITY IN CHILDREN AND YOUTH

In March 2020, SARS-CoV-2 (COVID-19) was declared a pandemic and spread across the globe. Travel restrictions, social distancing measures, and stay-at-home orders were instated to contain the infectious disease at the expense of physical activity opportunities. These conditions created an unprecedented environment for the promotion of additional sedentary time, unhealthy eating, and subsequent weight gain.

These health behavior changes may be expected as a large body of evidence suggests that children are more active on school days compared to the weekend,[8,9] likely due to the beneficial daily routine, access to physical activity options, and healthy meals provided within schools.[10,11] A pre-pandemic example of this phenomenon is that children tend to gain weight over summer holidays, where there is less structure in the day and fewer physical activity opportunities, and many children experience their healthiest meals at school.[12]

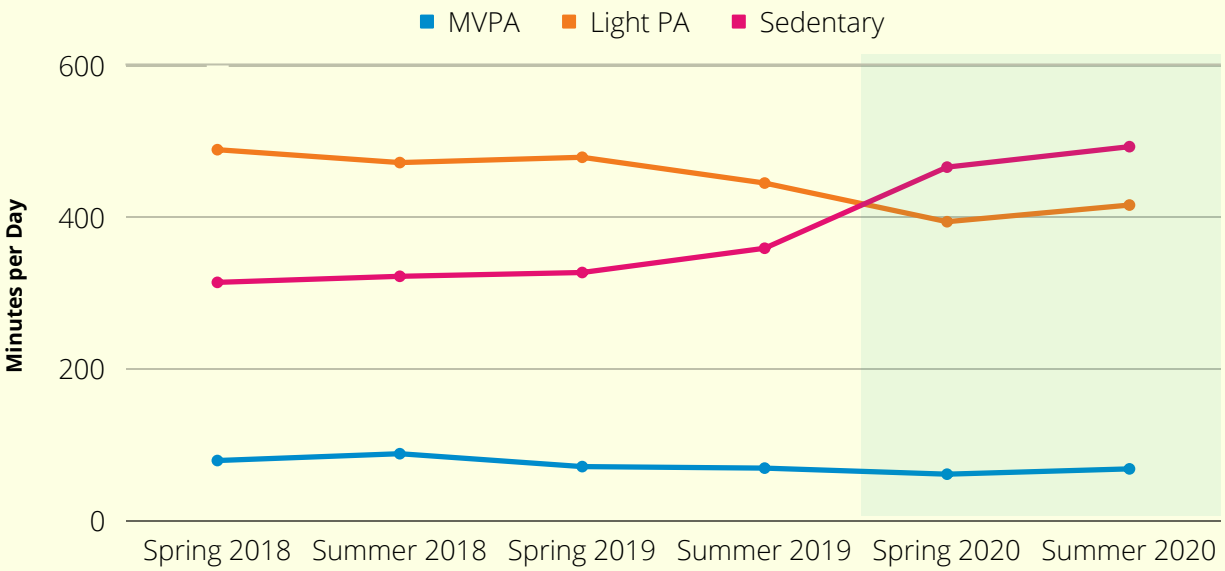
A cohort of 432,302 U.S. children and youth demonstrated that the rate of body mass index (BMI) increase approximately doubled during the early pandemic (March - November 2020) compared to the years prior (January 2018 - February 2020).[13] Increases in BMI z-score, which is a measure of relative weight adjusted for the child's age and sex, were also observed amongst 1,770 U.S. children when comparing pre-pandemic (2017-2019) and pandemic data (2020).[14] As shown in Figure 2, the BMI z-score increase translated into a higher prevalence of children with overweight and obesity, from 47.3% in 2019 to 58.8% in 2020.[14]

Figure 2. Changes in A) BMI z-scores and B) prevalence of overweight and obesity in a sample of 1,770 children followed longitudinally in South Carolina, US.[14]



Amongst a sub-sample of the same cohort (n=231) there was a decrease in moderate-to-vigorous physical activity (MVPA) and light physical activity during the pandemic (Spring and Summer 2020), and an increase in sedentary time compared to previous years (2018-2019, Figure 3).[15] This study also found an increase in screen time during 2020 (~97 minutes) compared to past years.

Figure 3. Changes in MVPA, light PA, and sedentary time in a sample of 231 children followed longitudinally.[15]



The decrease in MVPA during the pandemic was also observed in another cohort of adolescents (n=5,153) whose self-reported MVPA declined, with 16.1% meeting MVPA guidelines in 2016-2018 to only 8.9% in 2020.[16] This decrease was found amongst all racial groups, but it was particularly pronounced for minority and low-income groups. Unfortunately, this disparity may be expected as the COVID-19 pandemic differentially impacted racial minorities and low-income groups, who are more likely to serve in essential jobs outside the home, experience food insecurity, and have access to fewer opportunities for physical activity in existing environments.[17]

Considering the interplay of physical activity, sedentary time, and sleep (i.e., movement behaviors), many studies evaluated how children were spending this additional non-physically active time. A review of 110 articles assessing child movement behaviors during the pandemic (2020-2021) found most studies reported declines in physical activity, increases in sedentary time, shifting sleep schedules, and increases in various amounts in sleep duration.[18] Burkhart et al. found a slight increase in sleep (~17 minutes), though the mid-point of sleep episodes occurred around 2 hours later.[15] This indicates children were going to bed later and were waking up later in the morning. This delay in sleep may be attributed to additional screen time at night and lack of school start times, as children transitioned to remote schooling.

As the majority of formal instruction transitioned to web-based platforms during 2020,[19] organized sport participation activities were ceased or transitioned to solitary at-home pursuits as well. This transition to web-based platforms and existing travel restrictions also limited opportunity for active transportation in children and youth.[20,21]

These dramatic changes in the physical activity landscape created an opportunity to explore other existing infrastructure for play, including community parks. However, results from systematic observations in community parks in a metropolitan area (Austin, Texas, U.S.) revealed a 46% and 62% decrease in the number of girls and boys at parks, respectively, outside of school hours in 2020 compared to 2019.[22] There was also a 42% and 60% decrease in the number of girls and boys engaging in physical activity, respectively, outside of school hours compared to 2019. Park use may be limited during the COVID-19

pandemic because of park closures for social distancing, lack of transport, and families limiting social and recreational opportunities for children because of infection concerns.

On a positive note, the COVID-19 pandemic created an opportunity for children to engage in physical activity at home with family members. Still, disparities persist as families with access to more outdoor play spaces and equipment were those who were already more likely to support child physical activity and were of middle to high income amongst a U.S. sample (n=321).[23]

There are limitations to our understanding of the impact of the COVID-19 pandemic on children and youth's physical activity. Three main considerations are highlighted:

- **Policy and public health guidance**: Policy and guidance on physical activity is difficult to assess because of the heterogeneity and ever-changing guidance and enforcement of restrictions. Differing city, county, and state guidance makes attributing policy changes and their directionality (positive or negative impact) on individual physical activity difficult.
- **Data sources**: Most research was conducted amongst existing cohorts and research studies, limiting the translation of results to persons not typically involved in research. Additional burdens amongst vulnerable populations, including children with disabilities, may have been exacerbated during this time, further limiting their participation in research.
- **Long-term impact**: The COVID-19 pandemic included many different phases of restrictions and is currently ongoing, as the exact end point is not yet clear. As vaccines become available for most and additional public health measures are instated, opportunities to engage in physical activity may resume but the long-term effects are still unknown.

Taken together, the colliding pandemics of COVID-19 and physical inactivity created an extraordinary opportunity to revisit child physical activity at the individual, family, school, and policy level.[24] There is an urgent need and opportunity to ensure all children have opportunities to be physically active. Recommendations to address limitations in both research and practice include:

- Robust and timely assessment of policies at multiple levels and how these influence children's physical activity levels.
- Clear and relatable guidance for families, including guidance that can be tailored to individual family needs and actionable next steps to expand access to physical activity opportunities in daily life.
- Sustainable surveillance measures of children's physical activity including during the pandemic and when children and adolescents spend time out of school.
- Inclusion of minority and lower-income populations in the research and public health surveillance efforts.
- Continuous and rigorous assessment of meaningful health indicators related to physical activity in order to monitor changes in children's behavior and health at the population level.

INDICATORS

The following section provides a background and rationale for each Report Card indicator. The indicators encompass markers of physical activity behavior (overall physical activity, active transportation, organized sport participation, active play); behaviors related to physical activity within the context of the 24-hour day (sedentary behavior and sleep), health-related fitness; and settings and sources of influence (family and peers, schools, community and the built environment).

2022 Grade:

D-

OVERALL PHYSICAL ACTIVITY

Year	2014	2016	2018	2022
Grade	D-	D-	D-	D-

Indicator: Percentage of children and youth who meet the *Physical Activity Guidelines for Americans*, which recommend that children and youth accumulate at least 60 minutes of daily moderate-to-vigorous physical activity.

Key Findings

- **Between 21% and 28% of children 6 to 17 years of age** participate in 60 minutes of physical activity every day based on self-report (2019-2020 National Survey of Children's Health, NSCH[25] and 2017-2020 National Health and Nutrition Examination Survey, NHANES,[26] respectively).
- **23% of youth in high school** self-report participating in 60 minutes of physical activity every day, while 44% self-report participating in 60 minutes of physical activity on at least 5 days of the week (2019 Youth Risk Behavior Surveillance System, YRBSS).[27]
- **Fewer children and youth with disabilities ages 6-17 years are physically active**: 17.5% of children and youth (20.3% of boys and 13.5% of girls) with disabilities (broadly defined) report participating in 60 minutes of physical activity every day (2019-2020 NSCH).[25] The prevalence of children and youth with specific chronic conditions that meet the 60 minutes/day physical activity guideline is low: for example, 14.1% of children with an intellectual disability, 15.8% of children with cerebral palsy, and 17.7% of children with autism spectrum disorder report meeting physical activity guidelines (2019-2020 NSCH).[25]

- **A significant drop in physical activity occurs with increasing age**: 41.9% of 6-11 year-olds and 15.3% of 12-17 year-olds report levels of MVPA that meet physical activity recommendations (2017-2020 NHANES).[26]
- **Significant gender differences exist in reported physical activity levels in high school**: 23% of boys and 18% of girls 6 to 17 years of age report participating in 60 minutes of physical activity every day (2019-2020 NSCH).[25] Similarly, 31% of high school boys and 15% of high school girls participate in 60 minutes of physical activity every day (2019 YRBSS).[27]
- **Physical activity levels differ by weight status**: 31.0% of adolescents with a healthy weight report participating in at least 60 minutes of physical activity every day whereas 29.8% and 20.0% of children with overweight or obesity, respectively, report achieving recommended physical activity levels (2017-2020 NHANES).[26]

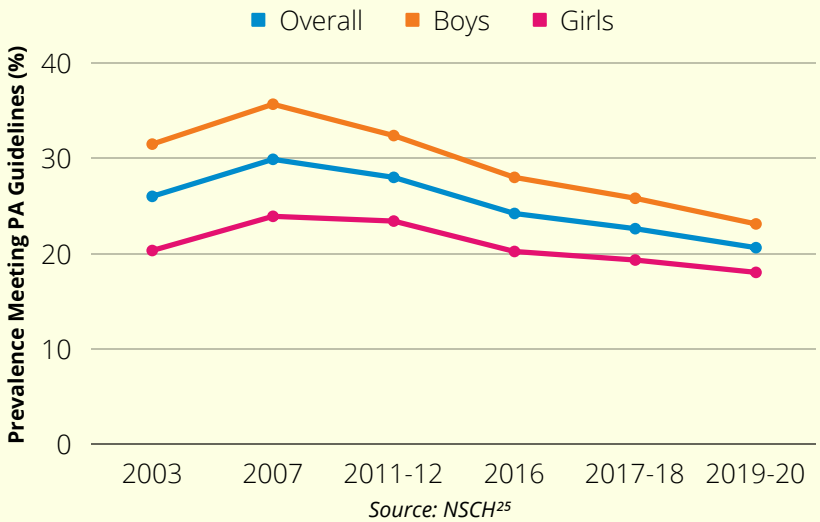
Data Synthesis:

In past report cards, the Report Card Research Advisory Committee relied on the 2005-2006 NHANES accelerometer-based assessment for the physical activity outcomes. These data showed that 21.6% of 6-19 year-old U.S. children and youth met the physical activity guidelines, with a considerable drop across age (42.5% among 6-11 year-olds versus 5.1% among 16-19 year-olds).[1–3,28] Given the increasing age of these data, now collected 16-17 years ago, before many of today's children were born, the primary physical activity outcomes for this report card are based on the next best available data, which are recent self-report data. The self-report data include similar estimates, showing 20.6% of 6-17 year-old U.S. children and youth participate in 60 minutes of physical activity every day.[25] Notably, there are considerable differences between genders (18% of girls versus 23.1% of boys), age (26.2% of 6-11 year-olds versus 15.2% of 12-17 year-olds), and disability status (17.5% of children and youth with disabilities).[25]

While self-report measures of physical activity can be different from objective, accelerometer-based measures, there is consistency between the objective accelerometry data in the 2005-2006 NHANES and the more recent self-report data in the 2019-2020 NSCH, with about one in five children and adolescents meeting physical activity guidelines. This is further confirmed by additional self-report measures that show 23.9% of youth in high school participate in 60 minutes of physical activity every day (2019 YRBSS)[27] and 28.3% of 6-17 year-olds participate in 60 minutes of activity every day (2017-2020 NHANES).[26] This consistency across measures and data sources lends support to the assignment of a grade of D- in 2022 for overall physical activity.

One area of particular concern is the decline over time in the percentage of youth who report accumulating 60 minutes of physical activity every day (Figure 4). The 2007 NSCH data showed a peak of 29.9% of 6-17 year-olds accumulating 60 minutes of physical activity every day with considerable differences between genders. While the gender differences have stayed consistent, the 2019-2020 NSCH data show approximately 10% less youth are accumulating the recommended level of physical activity.[25]

Figure 4. Prevalence of meeting physical activity guidelines by participating in at least 60 minutes of physical activity every day of the week among children and adolescents, by gender and survey period: U.S., 2003 to 2020.

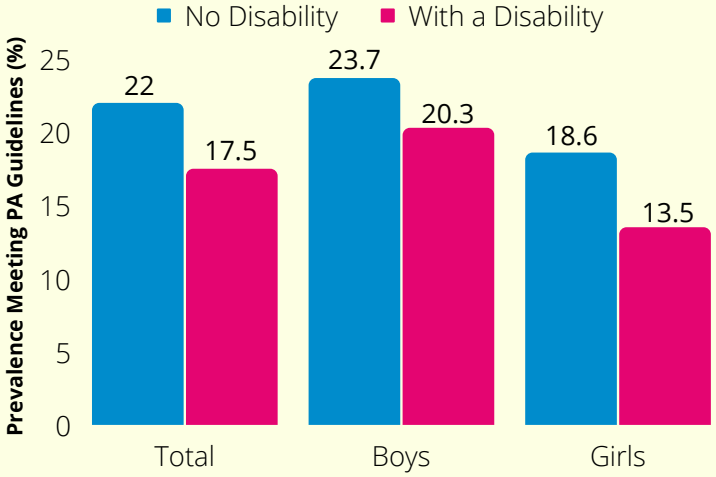


Source: NSCH[25]

Regardless of the data source, clear trends are seen for boys being more active than girls and for activity levels decreasing with advancing age. Additionally, NSCH data over the years, including the most recent cycle (Figure 5), consistently indicate that children and youth with disabilities fall well behind their peers without disabilities.[29–32] There are also clear differences in physical activity across weight status categories, suggesting youth with obesity are less likely to meet physical activity guidelines compared to their healthy weight and

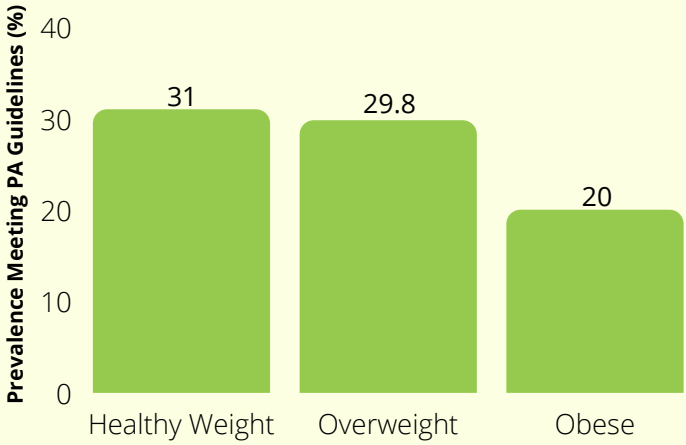
overweight peers (Figure 6). However, differences among race-ethnic subgroups in youth are less clear. While differences exist, some surveys show Non-Hispanic White youth to be most active (2019 YRBSS[27] and 2019-2020 NSCH)[25] while the self-report data in the 2017-2020 NHANES[26] shows Non-Hispanic Black youth to be most active. Regardless of the data source, Hispanic youth are the least active (Figure 7).

Figure 5. Prevalence of meeting physical activity guidelines by participating in at least 60 minutes of physical activity every day of the week among children and adolescents, by disability status.



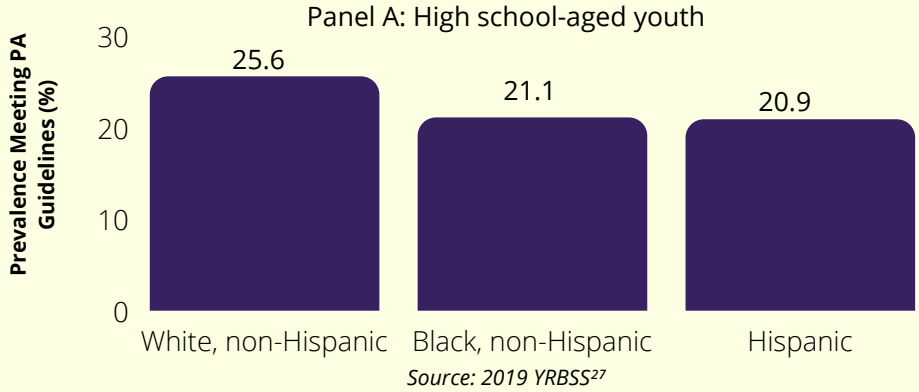
Source: NSCH[25]

Figure 6. Prevalence of meeting physical activity guidelines by participating in at least 60 minutes of physical activity every day of the week among children and adolescents, by weight status.

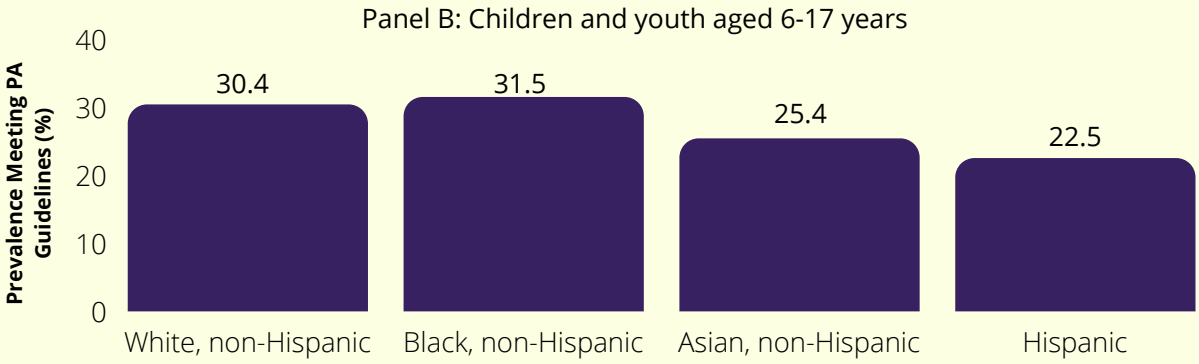


Source: 2017-2020 NHANES[26]

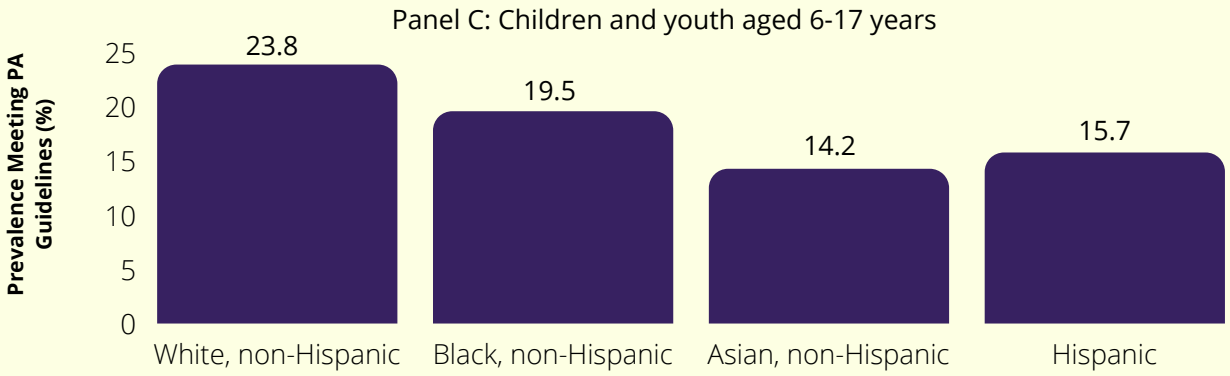
Figure 7. Prevalence of meeting physical activity guidelines by participating in at least 60 minutes of physical activity every day of the week among children and adolescents, by race/ethnicity and data source.



Source: 2019 YRBSS[27]



Source: 2017-2020 NHANES[26]



Source: 2019-2020 NSCH[25]

The physical activity guidelines for children and adolescents recommend that most of the 60 minutes of activity per day should be accumulated through moderate-to-vigorous intensity physical activity that is aerobic in nature.[6] However, muscle- and bone-strengthening activity should also be included as part of the 60 minutes.[6] Approximately 50% of high school-aged U.S. adolescents participate in muscle-strengthening exercises on at least 3 days per week which differed significantly by gender (girls, 39.7%; boys, 59.0%).[27]

Overall, given the low national prevalence of U.S. children and youth achieving the physical activity guidelines as measured by self-report and the evidence of age, gender, disability, and race/ethnicity disparities, a grade of D- was assigned as the indicator grade. Thus, the 2022 Report Card grade remains the same as the 2018,[3] 2016,[2] and 2014 Report Cards.[1]

Recommendations:

- Update nationally representative physical activity data by expanding device-based monitoring (accelerometers, pedometers).
- Develop surveys that contain culturally relevant physical activity questions for a number of ethnic/racial minority groups.
- Develop studies to better understand how physical activity estimates derived from different sources (e.g., accelerometer, self-report, parent proxy) relate to each other.
- Improve understanding of race/ethnic differences in physical activity levels across a variety of domains (school, leisure, home, etc.).
- Include children and youth with disabilities in national surveillance efforts and ensure that disability is clearly and consistently defined across surveys.
- Improve integration of muscle- and bone-strengthening activity participation into the measurement of meeting the physical activity recommendation.

DEVELOP SURVEYS THAT CONTAIN CULTURALLY RELEVANT PHYSICAL ACTIVITY QUESTIONS FOR A NUMBER OF ETHNIC/RACIAL MINORITY GROUPS.

2022 Grade: **D-**

ACTIVE TRANSPORTATION

Year	2014	2016	2018	2022
Grade	F	F	D-	D-

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

Key Findings

- **Approximately 38% of youth aged 12-19 years** walk or use a bicycle for at least 10 minutes continuously once or more in a typical week to get to and from places (2015-2016 NHANES).[33]
- **Most youth do not walk or bike for travel in a typical week**: 62%, 15%, and 23% of youth ages 12-19 years walk or bike for travel on 0, 1-4, and 5-7 days per week, respectively (2015-2016 NHANES).[33]
- **Significant gender differences exist in reported active transportation**: Approximately 45% of boys and 32% of girls aged 12-19 years report any active transportation in a typical week (2015-2016 NHANES).[33]
- **Reported active transportation differs among youth by income status, with youth from high income households reporting less active transportation than those from lower income households**: Rates of engagement in active transportation (at least once in a typical week) among youth aged 12-19 years are 46% for those living in households earning less than 130% of the federal poverty level, 36% for those living in households earning 130-349% of the federal poverty level, and 34% for those living in households earning 350% or more of the federal poverty level (2015-2016 NHANES).[33]

- **Race/ethnicity differences exist in reported active transportation among youth aged 12-19 years**: Rates of walking or biking to get to and from places (at least once in a typical week) are approximately 35% (White), 42% (Hispanic/Mexican American), 43% (Asian), and 45% (Black) (2015-2016 NHANES).[33]
- **Approximately 11% of children and youth aged 5-17 years** usually walk or bike to school (2017 National Household Travel Survey; NHTS).[34]
- **Fewer children living in rural areas walk to school compared to children living in urban areas**: When distance to school is 0.5 miles or less, walking comprises 61% of the trips in urban areas and 46% in rural areas (2017 National Household Travel Survey; NHTS).[34]

Data Synthesis:

Walking, biking, and other modes of human-powered transportation to get to and from places, or active transportation, is associated with greater overall physical activity among children and youth compared to travelling via motorized transportation. A recent review[35] summarized the evidence from 39 studies to identify locations in which children and youth are physically active. Active transportation was an important contributor of physical activity accounting for 11-22% and 35-58% of daily moderate-to-vigorous physical activity in children and youth, respectively.[35]

The grade has remained poor, at an F or D-, since the inaugural edition of the Report Card in 2014,[1] with approximately 38% of youth actively commuting at least once per week.[33] This percentage differs significantly by sex and race/ethnicity, with boys and non-White youth most frequently engaging in active transportation (Table 3).[33] Additional funding, policies, and implementation of evidence-based interventions to promote active transportation among children and youth are needed to reach the U.S. Department of Health and Human Services Healthy People 2030 goal to increase the proportion of adolescents who walk or bike to get to and from places to 44.9%.[36]

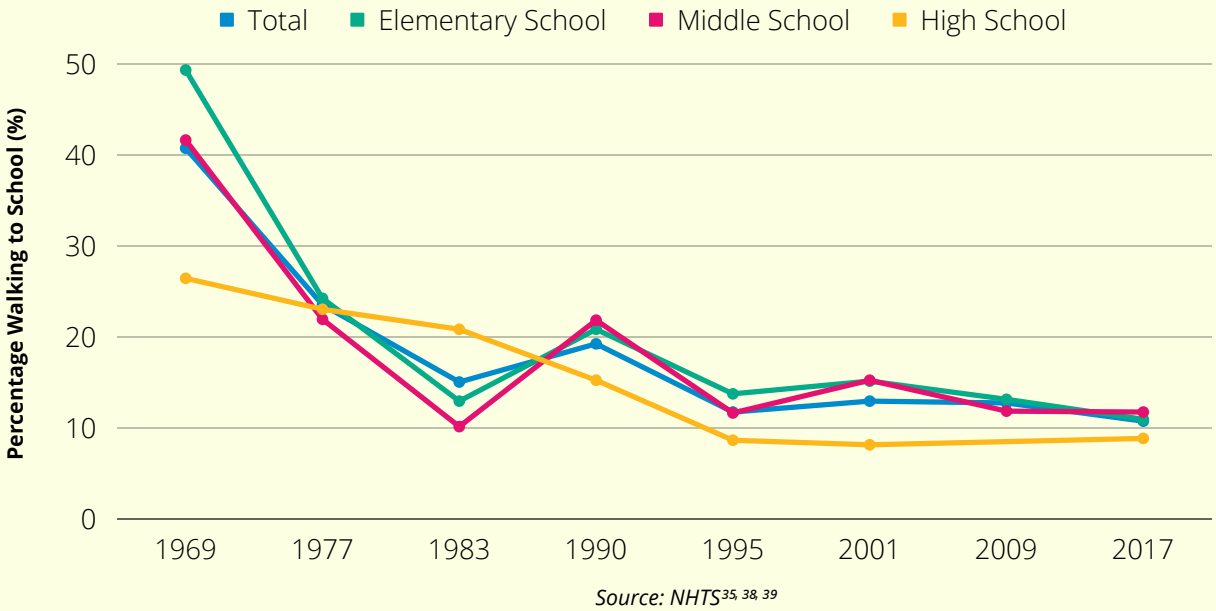
Table 3: Percentage of U.S. youth aged 12 to 19 years reporting active transportation to and from places on 0 days (none), 1-4 days (occasional), and 5-7 days (frequent), by sex and race/ethnicity.

	0 Days	1-4 Days	5-7 Days
Total	61.6	15.3	23.0
Boys	55.3	16.3	28.4
Girls	68.3	14.3	17.4
White, non-Hispanic	65.3	13.6	21.1
Black, non-Hispanic	54.5	15.6	29.9
Asian, non-Hispanic	57.3	11.3	31.3
Hispanic or Mexican American	58.2	18.2	23.6

Source: 2015-16 NHANES[33]

The overall grade is based on active transportation to get to and from any place; however, school is among the most common destinations for children and youth. The temporal trends in active transportation to and from school from 1969 to 2017 in the NHTS are presented in Figure 8.[34,37,38] The results show a steep decline in the prevalence of walking to school over the past 50 years from 41% of children and adolescents in 1969 to 11% in 2017.[34,37,38] While much of this decline occurred between 1969 and 1983, active transportation has remained consistently low since then despite investments.

Figure 8. Percentage of children and youth aged 5-17 years who usually walked or biked to school from 1969 to 2017, total and by school grade level.



Source: NHTS[35, 38, 39]

In 2005, Congress established walking and biking to school as a national priority by creating the Safe Routes to School program which aims to improve safety and increase active transportation to school through a variety of educational, infrastructure, and programmatic efforts.[39] Safe Routes to School programs have been established in more than 14,000 schools across all 50 states.[39] An evaluation[40] of the Safe Routes to School program found that the programs were effective at increasing walking and bicycling rates to and from school. The rate of walking and biking to school rose by 1.1 percentage points with each year of Safe Routes to School program participation, resulting in a 5.5% percentage point increase after 5 years.[40] Other evaluations have similarly found that Safe Routes to School programs increased active transportation to school.[41–45] While these results support the existence of effective programs to support active transportation, population-level active travel rates remain low.

More recently, in 2020, the American Heart Association recognized active transportation as a leading evidence-based strategy to increase physical activity and released a policy statement,[46] which provided recommendations and resources to promote active travel. The overarching recommendation was that policies and interventions operating at multiple levels (examples: microscale: bike racks; mesoscale: Safe Routes to School initiatives; macroscale: planning ordinances to intermingle various places of business/destinations) should be implemented in tandem in order to produce the needed large and equitable increases in active transportation.[46]

The stability in the poor Report Card grade may be partly due to the lack of consistent and comprehensive surveillance of active transportation among children and youth in the U.S. The D- grade was informed by the same data presented in the 2018 Report Card (2015-2016 NHANES).[33] The questions related to children and youth active transportation were not available in the most recent NHANES cycles so the prevalence of active transportation could not be updated.

A recent literature review by the National Collaborative on Childhood Obesity Research[47] confirmed the lack of surveillance and identified just one nationally representative active travel to school surveillance system – the National Household Travel Survey. Thus, there are two sources of nationally representative information on the active transportation prevalence among U.S. children (National Household Travel Survey, to/from school; and previous cycles of NHANES, to/from any place). Importantly, neither captures information on factors which may promote active transportation.[47] Various environmental factors, programs, and policies related to higher active transportation rates include school-based supports, such as the availability of bicycle racks at school or the presence of Safe Routes to School programs, and community supports, including traffic lights, designated road crossings, and traffic calming.[48] Information on both the prevalence of active transportation and related factors are necessary to develop additional evidence-based strategies.

Recommendations:

- Dedicate ongoing funding for active transportation policies and environmental supports within all states.
- Combine evidence-based interventions to promote active transportation operating at multiple levels (i.e., Safe Routes to School programs/policies, walking school buses, environmental supports, land-use planning, etc.).[46]
- Incorporate questions related to active transportation behaviors to school and other places into additional existing surveillance systems (i.e., NSCH, YRBSS).
- Maintain active transportation surveillance over time to enable more consistent monitoring.
- Include surveillance items related to contextual factors, which may promote active transportation, such as environment, policy, and program supports.[47]

DEDICATE ONGOING FUNDING FOR ACTIVE TRANSPORTATION POLICIES AND ENVIRONMENTAL SUPPORTS WITHIN ALL STATES.

2022 Grade:

C

ORGANIZED SPORT PARTICIPATION

Year	2014	2016	2018	2022
Grade	C-	C-	C	C

Indicator: Percentage of children and youth who participate in organized sport and/or physical activity programs.

Key Findings

- **Approximately 61% of 6-12 year-old children and 55% of 13-17 year-old adolescents** report playing on an organized or unorganized sports team at least once a year (2020 State of Play Report).[49]
- **Approximately 53% of 6-12 year-old children and 51% of 13-17 year-old** adolescents report playing an organized or unorganized individual sport at least once a year (2020 State of Play Report).[49]
- **Approximately 38% of 6-12 year-old children and 42% of 13-17 year-old adolescents** report playing a team sport (organized or unorganized) on a regular basis (2020 State of Play Report).[49]
- **Approximately 57% of high school students** report playing on at least one sports team during the previous year (2019 YRBSS).[27]
- **Children and youth with disabilities experience disparities in sport participation**: approximately 38% of children and youth with disabilities (broadly defined) ages 6-17 years report participating on a sports team or taking part in sports lessons during the past 12 months. Variations exist among children and youth with different chronic conditions; approximately 23% with cerebral palsy, 25% with autism spectrum disorder, and 27% with an intellectual disability participate on a sports team or in sports lessons during the previous year compared to 55% of the full 2019-2020 NSCH sample.[25]
- **A significant socioeconomic disparity in sport participation exists**: approximately 24% of children from low-income households (<$25,000 per year) compared to 43% of children from high-income households (≥$100,000 per year) engage in **regular sport activity** during the year (2020 State of Play Report).[49]

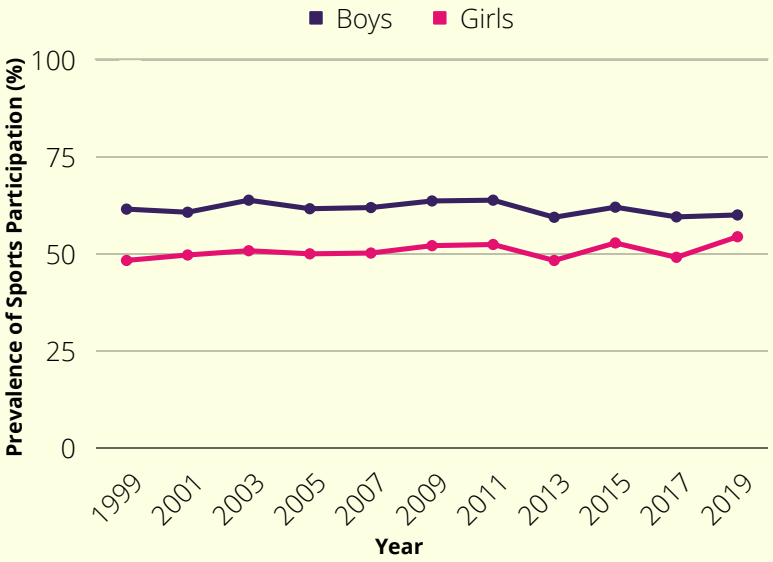
Data Synthesis:

Organized sport participation is an important outlet that allows children and youth to participate in moderate and vigorous physical activity and to reap the benefits of interacting with others. Studies have found that students participating in sports were more likely to meet physical activity guidelines than their peers who do not participate in sports.[50] In 2019, the United States Department of Health and Human Services released the National Youth Sports Strategy which is the first federal roadmap to outline strategies to increase participation in youth sports, increase awareness of the benefits of participating in youth

sports, monitor and evaluate youth sports participation, and recruit and engage volunteers in youth sports programming.[51]

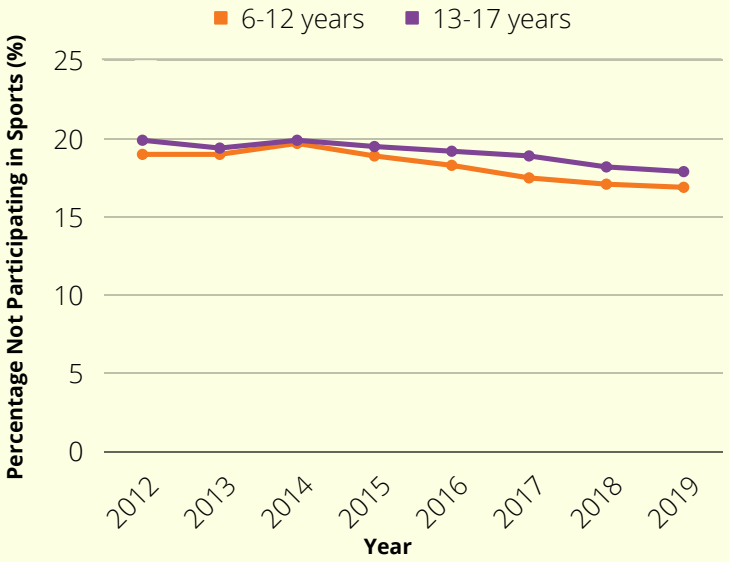
As highlighted above, there are several sources of data on organized sport participation in children and youth. Overall, the grade has remained fairly stable at a C- or C over the last cycles of the Report Card. The results for sport participation presented in the 2022 Report Card show a continued stabilization of sport participation. For example, Figure 9 presents the temporal trends in sports participation from 1999-2019 in the YRBSS.[27] The results indicate that participation on sports teams among high school students has remained relatively stable over the past two decades, and trends in participation in boys and girls has remained similar; however, the gender gap appears to be narrowing over time. In 2019, approximately 57% of high school students reported playing on at least one team during the previous year.[27] Figure 10 presents the percentage of 6-12 and 13-17 year-old children and adolescents who engaged in no sport activity during the year. It is encouraging that the percentages observed in both age groups continues to drop year after year, dropping approximately 2 to 2.5 percentage points between 2014 and 2019.

Figure 9. Prevalence of participation on sports teams in high school students, United States, 1999 to 2019 YRBSS.[27]



Source: 1999-2019 YRBSS[27]

Figure 10. Percentage of children and adolescents who engaged in no sport activity during the year, United States, 2012 to 2019.[49]



Source: 2020 State of Play Report[49]

According to the 2020 State of Play Report[49] produced by the Aspen Institute (www.aspenprojectplay.org), approximately 61% of 6-12 year-old children and 55% of 13-17 year-old adolescents report playing on an organized or unorganized team at least once per year. Approximately 38% of 6-12 year-old children and 42% of 13-17 year-old adolescents report playing a team sport on a regular basis.[49]

Although the grade of "C" indicates that we are succeeding with about half of children and youth with respect to organized sport participation, some important disparities are evident. For example, 61% of heterosexual students participate, while only 41.5% of gay, lesbian or bisexual students participate.[27] Further, the prevalence of regular sport participation among 6-12 year-old and 13-17 year-old children from high-income households (≥$100,000 per year) is 44% and 47%, respectively, compared to 23% and 28%, respectively, among children from low-income households (<$25,000 per year).[49] Data also consistently support that, in general,

children and youth with disabilities have lower participation rates in organized sport compared to their peers without disabilities, and that age and gender disparities persist within this subgroup.[25,31,52]

Recommendations:

The National Youth Sports Strategy includes a comprehensive set of recommendations to foster participation in youth sports.[51] An abbreviated list of recommendations is provided below at the individual (youth), interpersonal, organizational, community, and public policy levels (Table 4).

Table 4. Framework for Understanding and Promoting Youth Sports Participation*

Domain	Intervention Approaches/Considerations
Individual	• Awareness, knowledge, & beliefs • Personal growth • Physical literacy • Sport sampling
Interpersonal	• Awareness, knowledge, & beliefs • Injury & abuse prevention • Physical literacy • Positive role modelling & mentoring • Quality coaching skills • Unstructured sports play
Organizational	• Coach & volunteer recruitment, training and retention • Funding • Partnerships & community engagement • Quality sports programming • Transportation
Community	• Access to play spaces • Awareness, knowledge, & beliefs • Capacity building • Resources • Transportation
Public Policy	• Legislation & Policy • Proclamations, awareness, & other media • Research, funding, & surveillance

**Adapted from Figure 4 presented in the National Youth Sports Strategy.[51]*

THE NATIONAL YOUTH SPORTS STRATEGY INCLUDES A COMPREHENSIVE SET OF RECOMMENDATIONS TO FOSTER PARTICIPATION IN YOUTH SPORTS.[51]

2022 Grade:

INC

ACTIVE PLAY

Year	2014	2016	2018	2022
Grade	INC	INC	INC	INC

Indicator: Percentage of children and youth who report being outdoors for several hours a day.

Key Findings

- **The percentage of 6 to 12 year-old children who spent time outdoors** decreased from approximately 16% in 1997 to 10% in 2003 according to the most recent available data (Child Development Supplement to the Panel Study of Income Dynamics).[53]
- **Approximately 65% of school districts have policies requiring** elementary schools to provide regularly scheduled recess, while 31% of districts recommend elementary schools do so (2016 SHPPS).[54]

Data Synthesis:

Play is an essential component of healthy human development, as it contributes to the emotional, physical, cognitive, and social well-being of children and youth.[55] "Active play" is one way that children and youth can accumulate time spent in physical activity. Unfortunately, no definitions exist for "active play" nor are nationally representative data available on the percentage of children and youth who engage in unstructured/unorganized active play across the day. This is a gap in our ability to identify "active play" and track it in current public health surveillance systems.

Research, however, has shown that time spent outdoors is associated with higher levels of physical activity,[56] encouraging a greater range of active play pursuits. Although active play theoretically has many benefits, time in and opportunities for active play have eroded for many children and youth.[53] Barriers to children playing outside include extreme temperatures, rainy or inclement weather, children's fear of groups of teenagers and bullies in their play areas, parent's perceptions of safety, and lack of infrastructure.[57,58] Many of these barriers can be overcome by creating more supportive physical activity environments and changing child and parental perceptions and attitudes about playing outside. Unfortunately, many children have busy schedules, and their playtime may be limited. Between 1997 and 2003, for example, the time children aged 6 to 12 years spent outdoors, playing sports, or engaging in other leisure activities decreased significantly while time spent studying, watching television, and attending religious services and youth groups increased.[53] Because of a dearth of nationally representative data, it is unknown if this proportion of time spent outdoors has further declined in the past 20 years since the last available data.

One opportunity for increasing outdoor active play is school recess, but only 62% of school districts require elementary schools to provide regularly scheduled recess breaks.[54] Furthermore, the percentage of children participating in regularly scheduled recess decreases across advancing grade levels.[59] A study of elementary-aged children found that boys and girls spent about 33% and 23% of recess time engaged in physical activity, respectively. Subsequently, if children spend 1 hour each day in recess or some form of activity break, they could accrue about 14-20 minutes of additional daily activity.[60]

Not only do recess and other activity time promote physical activity, but active play during the school day may also improve behavior and school achievement. A nationwide poll of 1,951 elementary school principals showed that they recognize the value that recess and additional activity breaks conferred on their students.[61] More than 80% of school principals reported that recess led to better academic achievement and approximately 67% reported that students are better listeners and more focused following recess. Further, almost 100% of principals believed that recess has a positive effect on students' social development and general well-being. However, principals cited important barriers that must be overcome. For example, almost 80% of principals reported that their school continues to take recess away from students as a punishment for bad behavior. Additionally, principals consistently reported that school staff have difficulty managing students' behavior during recess and activity breaks. To overcome these challenges and prioritize recess and other activity breaks, the principals indicated that schools need additional staff to monitor recess, better playground equipment, and staff training in managing playground behavior.[61]

Although time spent outdoors may be more specific, objective, and easier to define than 'active play', lack of benchmarks or guidelines result in the Report Card Research Advisory Committee being unable to assign a grade for this indicator for outdoor time. Currently, there are no recommendations as to the length of time children and youth should spend out of doors each day.

Relationship between Outdoor Time and Physical Activity[56]

- Among 28 observational studies, outdoor time was consistently associated with higher levels of physical activity.
- Studies found that children were more active outdoors than indoors.
- These associations were consistent regardless of method of physical activity assessment.
- Few studies documented the relationship between outdoor time and motor skill level or cardiorespiratory fitness.

Recommendations:

- Parents should ensure that their children spend time daily in safe outdoor settings that are compatible with physical activity, and they should frequently spend time outdoors playing with their children.
- Youth service providers, including schools, early care and education centers, and afterschool and summer programs, should adopt and implement policies aimed at ensuring that the children in their care spend time daily in outdoor settings that are safe and conducive to physical activity.
- Researchers should describe the dose-response relationship between time spent outdoors and total daily physical activity in children as well as other markers of health, such as motor skill level and cardiorespiratory fitness.
- Expert panels should establish guidelines for daily time spent outdoors by children.
- Public health agencies should develop and implement surveillance procedures for monitoring daily time spent outdoors by children.

YOUTH SERVICE PROVIDERS, INCLUDING SCHOOLS, EARLY CARE AND EDUCATION CENTERS, AND AFTERSCHOOL AND SUMMER PROGRAMS, SHOULD ADOPT AND IMPLEMENT POLICIES AIMED AT ENSURING THAT THE CHILDREN IN THEIR CARE SPEND TIME DAILY IN OUTDOOR SETTINGS THAT ARE SAFE AND CONDUCIVE TO PHYSICAL ACTIVITY.

2022 Grade: **D**

SEDENTARY BEHAVIORS

Year	2014	2016	2018	2022
Grade	D	D-	D	D

Indicator: Percentage of children and youth engaging in 2 hours or less of screen time per day.

Key Findings

- **Approximately 20% of children and youth aged 6-17 years** report engaging in 2 hours or less of screen time per day (2017-2018 NHANES).[62]
- **Approximately 54% of high school-aged students** report using a computer or other electronic device for less than 3 hours per day (2019 YRBSS).[27]
- **Significant race/ethnicity differences exist in reported screen time**: Children and adolescents aged 6-17 years meet screen time guidelines at rates of 21% (White), 20% (Hispanic/Mexican American), 19% (Asian), and 13% (Black) (2017-2018 NHANES).[62]
- **Younger children aged 6-11 years are more likely to meet screen time guidelines than adolescents aged 12-17 years**: 60% versus 38%, respectively (2019-2020 NSCH).[25]
- **Approximately 40% of children and adolescents with disabilities aged 6-17 years engage in 2 hours or less of screen time per day**: 39.3% of children and adolescents with disabilities (broadly defined), 39.7%, 44.8%, and 45.8% of children with autism spectrum disorder, cerebral palsy, and intellectual disabilities, respectively, meet the screen time guidelines (2019-2020 NSCH).[25,30]

Data Synthesis:

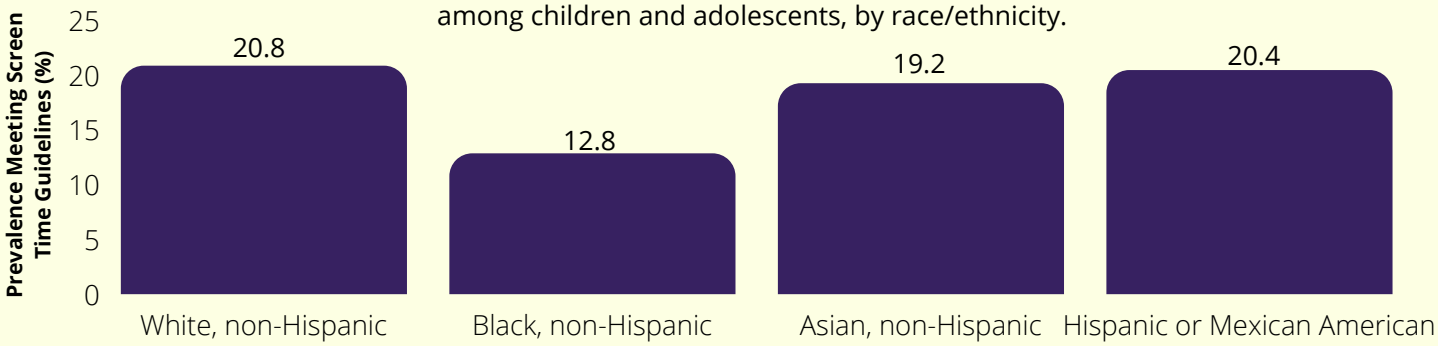
Sedentary behaviors are activities done while sitting, reclining, or lying down that have very low energy expenditure.[63] Children sit frequently during school, transportation, and recreation. Screen time activities are common recreational sedentary behaviors.[64] It is difficult to measure sedentary behavior for large groups of people, and there is debate about the best way to collect this information since sedentary behavior happens across many contexts. As such, screen time is a common proxy for sedentary behavior and was the primary data source used to determine the sedentary behavior grade.

Currently, no federal guidelines exist for overall sedentary behavior or for screen time (watching television, playing traditional video games, and using electronic devices) in children and youth. In 2016, the American Academy of Pediatrics (AAP) changed the screen time recommendation for children ages 5 and older from '2 hours or less' to a personalized family media plan including adequate sleep and physical activity.[65] The AAP also recommends families establish media free times, such as during dinner and immediately before bedtime, as well as media free zones, including bedrooms.[65] National recommendations in Canada[66] and Australia[67] recommend 2 hours or less of screen time for children and youth aged 5 to

18 years, aside from schoolwork. Given the ambiguity in evaluating the prevalence of children meeting the current U.S. screen time guidelines, the Report Card Research Advisory Committee utilized the '2 hours or less' screen time guideline from the Canadian[66] and Australian[67] recommendations. The 2017-2018 NHANES prevalence of 20% of children ages 6-19 years meeting the screen time guidelines is associated with a grade of D. Fewer children meet the guidelines than in the 2018 Physical Activity Report Card. The prevalence of children and youth reporting 2 hours or less of daily screen time declined from 33% in 2015-2016 to 20% in 2017-2018.[62]

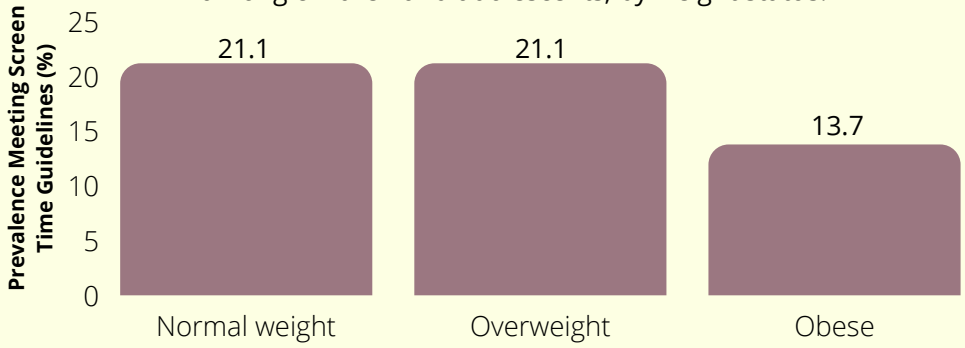
Age and ethnic disparities remain. More young children (6-11 years; 27.1%) meet the recommendation compared to older children (12-19 years; 11.9%). Fewer Non-Hispanic Black children meet the recommendation compared to Non-Hispanic White children (Figure 11). Fewer children who are overweight or have obesity meet the screen time recommendation compared to children with a normal weight (Figure 12).[62] The prevalence of meeting the guidelines is similar in boys (20%) and girls (19%).

Figure 11. Prevalence of meeting screen time guidelines among children and adolescents, by race/ethnicity.



Source: 2017-2018 NHANES[62]

Figure 12. Prevalence of meeting screen time guidelines among children and adolescents, by weight status.

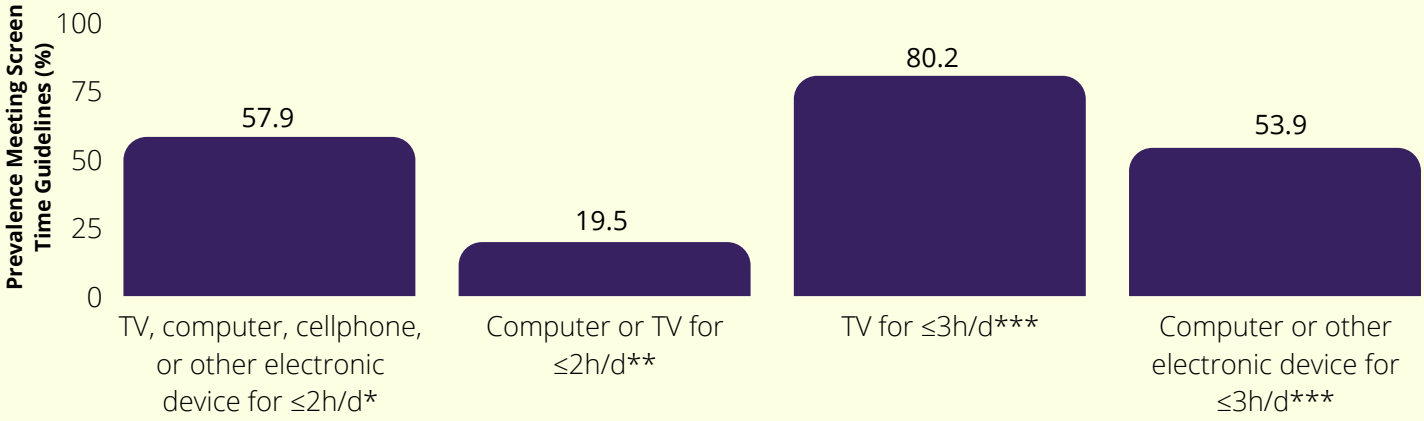


Source: 2017-2018 NHANES[62]

The 2019-2020 NSCH[25] and the 2019 YRBSS[27] are other national sources of information on screen time behaviors. In the 2019-2020 NSCH,[25] 57.9% of children and adolescents aged 6-17 years engage in less than 2 hours per day of TV, computer, cellphone, or other electronic device use. Children aged 6-11 years are more likely to engage in less than 2 hours per day of screen time compared to youth aged 12-17 years (59.6% and 37.6%, respectively). Similar to NHANES data reported above, gender differences are small (59.6% of girls versus 56.1% of boys met guidelines) but ethnic disparities are apparent with 63% of white compared to approximately 50% of Black and Hispanic children and adolescents meeting screen time guidelines. Disability status differences in screen time behaviors are also evident in the 2019-2020 NSCH.[25] The prevalence of meeting screen time guidelines is 60% among children

without a disability and 39% among those with a disability.[25] There are no evident age disparities in screen time behavior by disability status using the 2019-2020 NSCH data.[25] However, it is notable that children and youth with disabilities across the 6-17 year-old age range show a similar prevalence of meeting the 2 hours/day guidelines as the older youth aged 12-17 years in the total sample (39.3% and 37.6%, respectively).[25] The 2019 YRBSS[27] reports that 80.2% of children in grades 9-12 watch 3 or fewer hours per day of TV while only 53.9% report 3 or fewer hours per day of computer and electronic device use. This shift away from TV to alternative electronic devices is similar to that observed in the 2017-2018 NHANES[62] in which 63% of children and youth watch fewer than 2 hours per day of TV and videos whereas only 20% watch fewer than 2 hours per day of TV and computers (Figure 13).

Figure 13. Prevalence of engaging in less than 2 or 3 hours of screen time per day among children and adolescents, by type and amount of screen time.



*Sources: *2019-2020 NSCH, ages 6-17 years;[25] **2017-2018 NHANES, ages 6-17 years;[62] ***2019 YRBSS, high school aged.[27]*

Recommendations:

- Develop guidelines for sedentary behavior and screen time in children and youth that account for competing behaviors such as physical activity and sleep.
- Continue to refine and determine the most appropriate methods for assessing sedentary behaviors for the population.
- Incorporate different electronic devices into population surveillance to account for shifting use of screens and media.
- Develop a better understanding of causes for ethnic disparities and work to develop culturally relevant efforts to decrease sedentary behavior in vulnerable groups.

DEVELOP GUIDELINES FOR SEDENTARY BEHAVIOR AND SCREEN TIME IN CHILDREN AND YOUTH THAT ACCOUNT FOR COMPETING BEHAVIORS SUCH AS PHYSICAL ACTIVITY AND SLEEP.

2022 Grade:

C+

SLEEP

Year	2014	2016	2018	2022
Grade	N/A	N/A	N/A	C+

Indicator: Percentage of children and youth who obtain the recommend age-appropriate hours of sleep on weeknights

Key Findings

- **Approximately 64% of 6-11 year-olds and 68% of 12-17 year-olds** are sleeping for the recommended age-appropriate hours on weeknights (2019-2020 NSCH).[25]
- **Fewer children and adolescents with disabilities are sleeping for the recommended hours**: 55% of 6-17 year-olds with disabilities sleep the recommended age-appropriate hours on weeknights (2019-2020 NSCH).[25]
- **62% of 16-19 year-olds** are sleeping for at least 8 hours on weeknights (2017-2020 NHANES).[26]
- **22% of high school students** are sleeping for at least 8 hours on an average school night (2019 YRBSS).[27]

Data Synthesis:

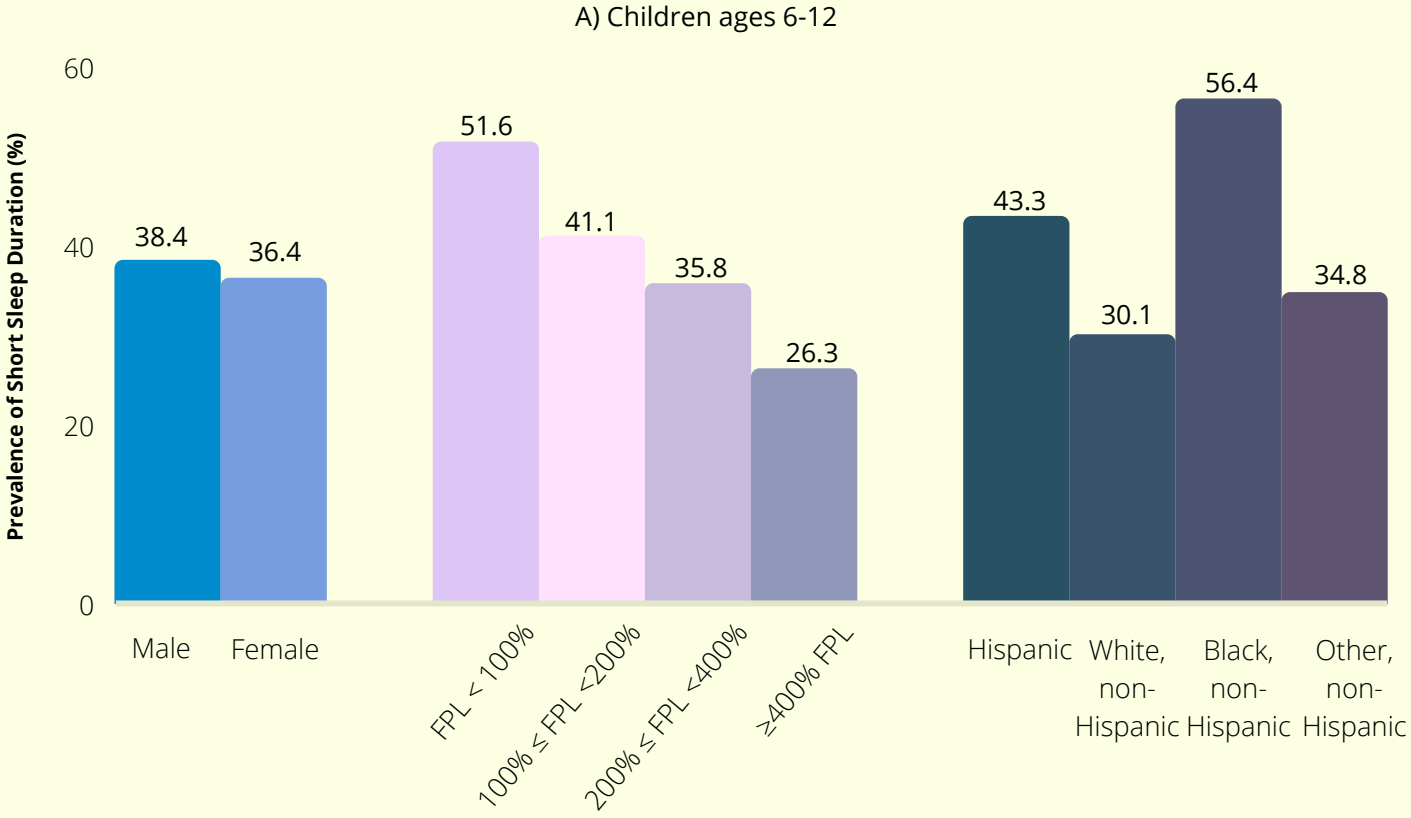
Sleep is an essential behavior and is required for maintaining physical and mental health and promoting healthy development in both children and adults. Sleep is one of the three primary components of the 24-hour daily cycle, along with physical activity and sedentary behavior.[68] In childhood, insufficient sleep is a risk factor for obesity, diabetes, poor mental health, attention and behavioral problems, injuries, and poor cognitive development.[69,70] Despite the numerous health benefits associated with sleep, there is evidence that sleep duration has decreased over time in children. For example, sleep duration declined by approximately 0.75 minutes/night per year between 1905 and 2008 based on data from 20 countries. This suggests that sleep has decreased by more than one hour per night over this time period.[71] The decline is hypothesized to have resulted from competing demands on children's time, whereby sleep is displaced by other activities and exacerbated by environmental and behavior factors such as artificial light, late-night electronic media exposure, and low priority given to sleep by families and society.[72]

Current sleep guidelines from the American Academy of Sleep Medicine (AASM) indicate that children and youth should be sleeping for 9 to 12 hours per night (6-12 year-olds) or 8 to 10 hours per night (13-18 year-olds).[69] Data from the 2019-2020 NSCH indicate that 64% of 6-11 year-olds and 68% of 12-17 year-olds met these recommendations on weeknights.[25] These results are supported by those from the 2017-2020 NHANES where 62% of 16-19 year-olds slept for at least 8 hours on weeknights.[26] On the other hand, these results are in contrast to

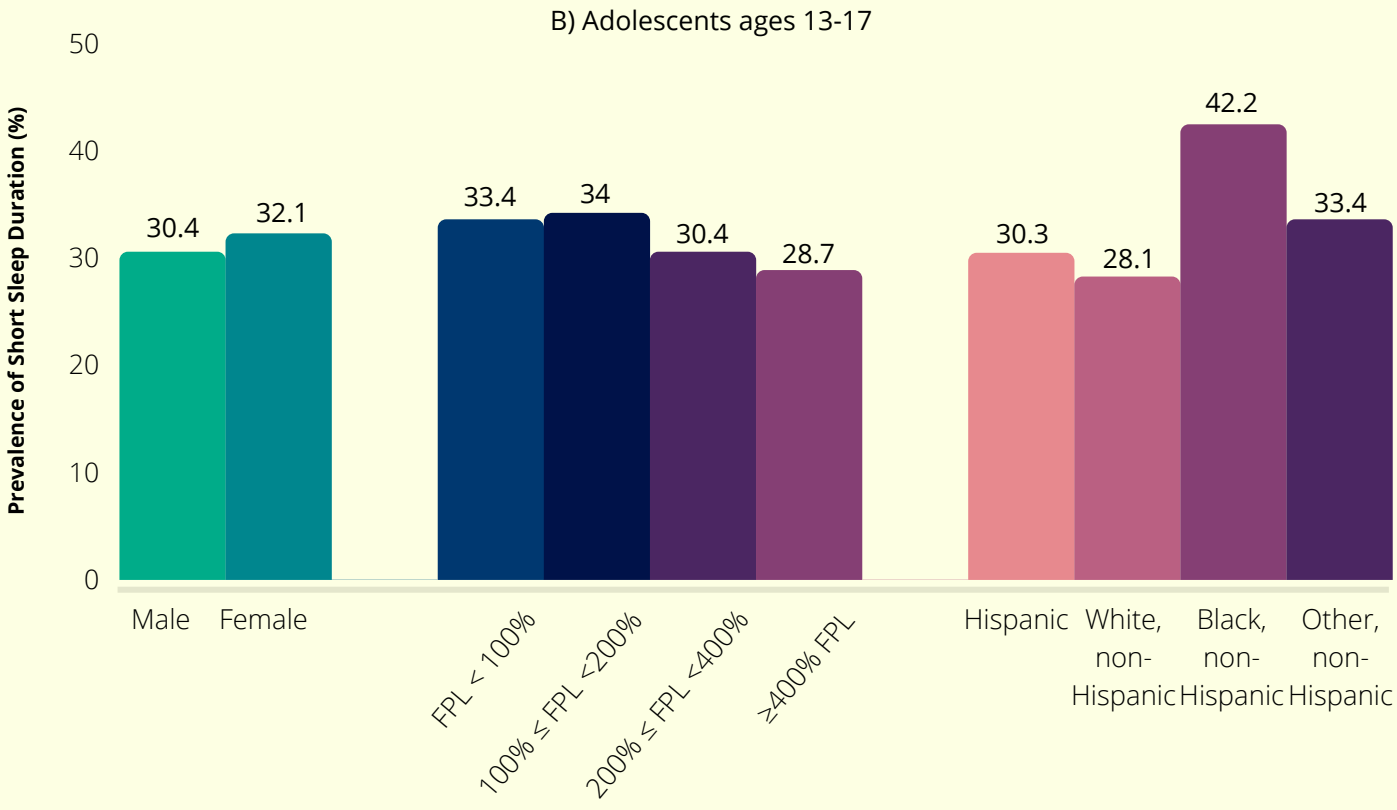
those from the 2019 YRBSS, which indicate that only 22% of high-school students are getting 8 or more hours of sleep per night.[27] The reasons for the discrepancy in these national statistics are unknown; however, the data from the NSCH are parent-reported while data from YRBSS are student-reported.

There are disparities in short sleep duration (not achieving the minimally recommended number of hours of sleep: <9 hours in 6-12 year-olds and <8 hours in 13-18 year-olds) by race/ethnicity and family income. Figure 14 presents the prevalence of short sleep duration by sex, race/ethnicity and family income (% of the Federal Poverty Level (FPL)) from the 2016-2018 NSCH.[73] While the prevalence of short sleep duration is similar in boys and girls, there is a trend for those from lower socioeconomic status households (lower %FPL) to have a higher prevalence of short sleep duration, especially among 6 to 12 year-old children. Further, non-Hispanic Black children have the highest prevalence of short sleep duration among the race/ethnic groups. Among children and youth with disabilities, approximately 55% report sleeping the recommended age-appropriate hours on weeknights, which indicates that short sleep duration is more prevalent in this subgroup.[25]

Figure 14. Prevalence of short sleep duration in A) children and B) adolescents according to gender, income level (% federal poverty level, FPL), and race/ethnicity, United States, 2016-2018.



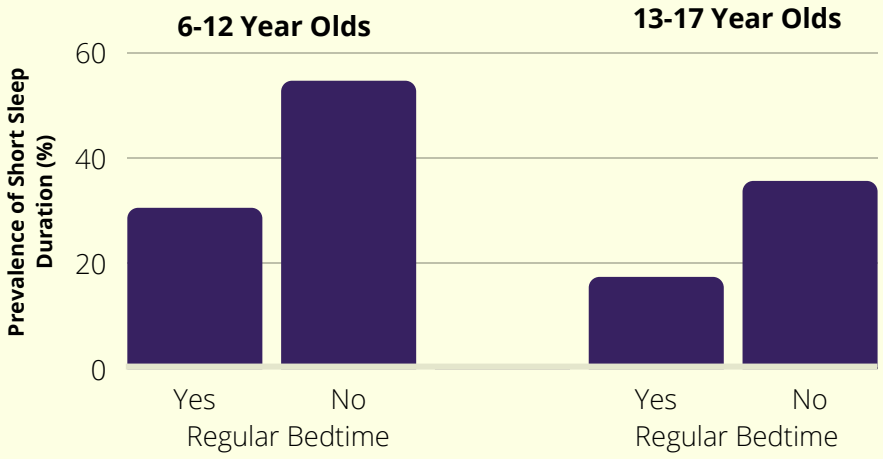
Source: 2016-2018 NSCH[73]



Source: 2016-2018 NSCH[73]

According to data from the 2016-2018 NSCH, 37% of 6 to 12 year-old children and 24% of 13 to 17 year-old adolescents had a regular bedtime.[73] Figure 15 reports the prevalence of short sleep duration according to whether or not the children had a regular bedtime. It is clear in both age groups that those whose parents reported that they have a regular bedtime also report a lower prevalence of short sleep duration.

Figure 15. Prevalence of short sleep duration in children and adolescents according to whether they have a regular bedtime, United States, 2016-2018.[73]



Source: 2016-2018 NSCH[73]

Recommendations:

- School-aged children and youth should be sleeping for 9 to 12 hours per night (6-12 year-olds) or 8 to 10 hours per night (13-18 year-olds).[69]
- Parents should promote consistent bedtimes for their children as a way to ensure adequate sleep time is available to meet the sleep duration guidelines.

PARENTS SHOULD PROMOTE CONSISTENT BEDTIMES FOR THEIR CHILDREN AS A WAY TO ENSURE ADEQUATE SLEEP TIME IS AVAILABLE TO MEET THE SLEEP DURATION GUIDELINES.

2022 Grade:

C-

PHYSICAL FITNESS

Year	2014	2016	2018	2022
Grade	INC	D	C-	C-

Indicators:

- Percentage of children and youth who meet criterion-referenced standards for cardiorespiratory fitness.
- Percentage of children and youth who meet criterion-referenced standards for muscular strength.
- Percentage of children and youth who meet criterion-referenced standards for muscular endurance.

Key Findings

- **Approximately 42% of 12 to 15 year-old youth** have adequate cardiorespiratory fitness levels (2012 NHANES National Youth Fitness Survey; NNYFS).[74]
- **Approximately 5.3% of boys and 12.1% of girls aged 15 to 19 years** are in the "excellent" *Health Benefit Zone* for grip strength. Further, more boys (37.2%) than girls (20.3%) are in the "needs improvement" *Health Benefit Zone* (2011-12 NHANES).[75,76]
- **Approximately 52% of children aged 6 to 15 years** have adequate muscular endurance, based on the number of pull-ups performed (2012 NNYFS).[77]

Data Synthesis:

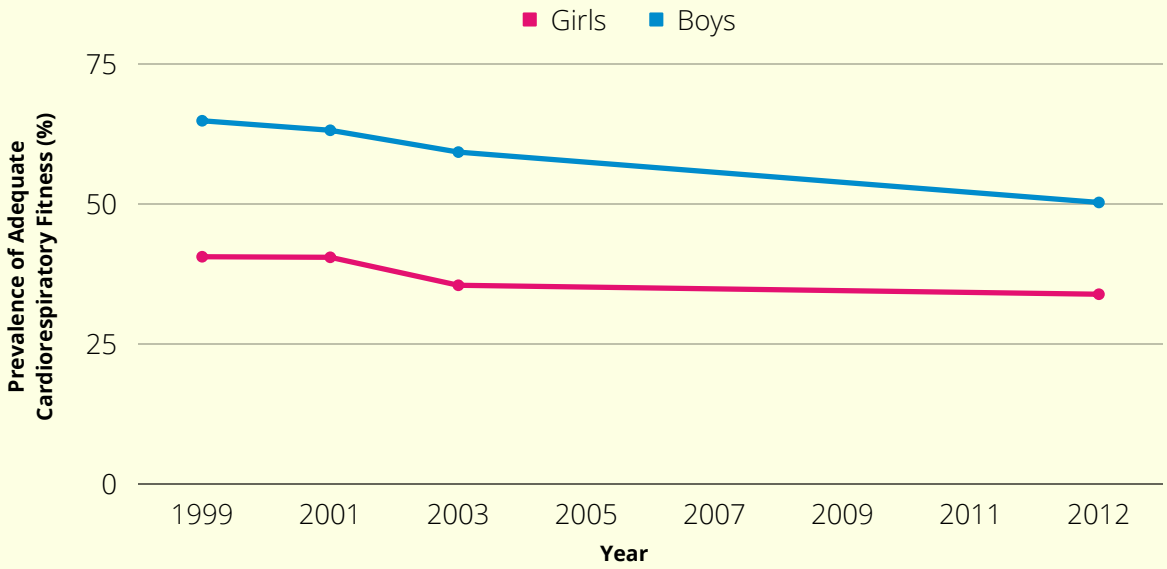
While physical activity, sedentary behavior and sleep are lifestyle behaviors, physical fitness is defined as an attained set of characteristics that relates to the ability to perform physical activity. Physical fitness is determined by a variety of factors, including an individual's level of habitual physical activity, heredity and diet.[78]

Health-related physical fitness refers to those components of fitness that are favorably or unfavorably affected by habitual physical activity and are related to health status. Most people generally associate "fitness" with aerobic or cardiorespiratory fitness. Other important components of health-related fitness include muscular fitness (strength and endurance), motor fitness, metabolic fitness, and morphological fitness (body composition).[78]

Nationally representative data on cardiorespiratory fitness are available for adolescents in the United States. However, these data, measured most recently in the 2012 NHANES National Youth Fitness Survey (NNYFS), are now a decade old.[77] Adolescents 12-15 years of age participated in a sub-maximal exercise test on a treadmill in the 1999-2004 NHANES in addition to the 2012 NNYFS. The percentage of youth aged 12 to 15 years with adequate

levels of cardiorespiratory fitness (attaining the age- and gender-specific FITNESSGRAM "*Healthy Fitness Zone*") decreased from 52% in 1999–2000 to 42% in 2012.[74] Figure 16 demonstrates these changes over time for boys and girls. Fitness levels have declined over time, and it appears as though the gender-gap in fitness is narrowing over time, which is largely due to a decline among boys.

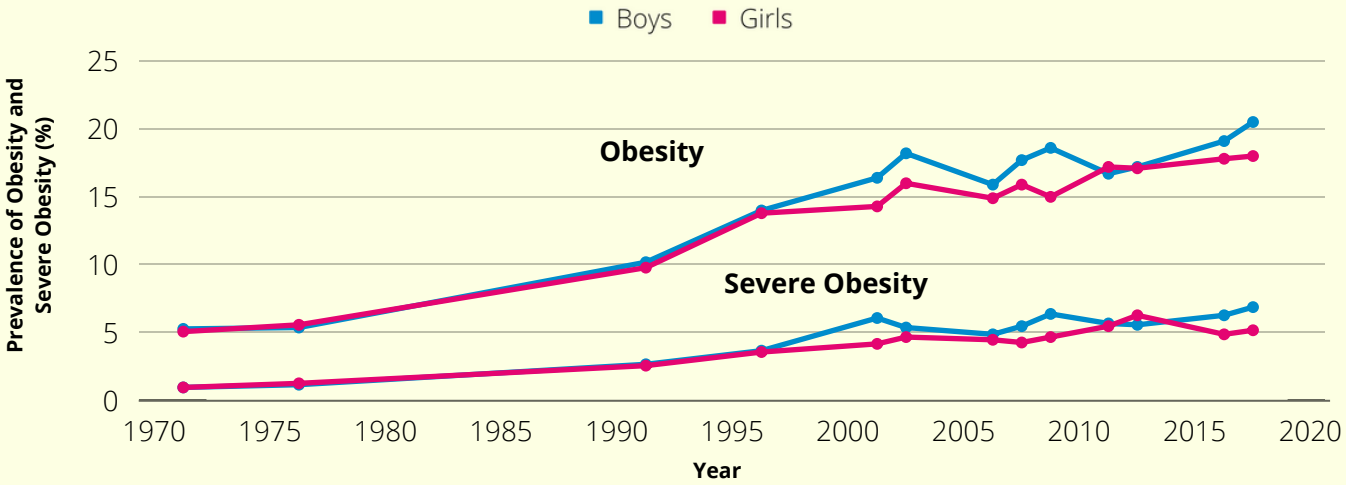
Figure 16. Prevalence of adequate levels of cardiorespiratory fitness in 12-15 year-old adolescents, United States, 1999-2000 to 2012.[74]



Data are also available for muscular endurance. Based on the number of pull-ups performed, approximately 52% of children aged 6 to 15 years had adequate muscular endurance in the 2012 NNYFS, attaining the age- and gender-specific FITNESSGRAM *Healthy Fitness Zone* (custom tabulation). With respect to muscular strength (grip strength), only 5.3% of boys and 12.1% of girls aged 15 to 19 years are in the "excellent" *Health Benefit Zone* for grip strength.[75] The data for grip strength are not directly comparable to those for cardiorespiratory fitness as they are benchmarked against the Canadian *Health Benefit Zones* rather than FITNESSGRAM *Healthy Fitness Zones*.

Obesity remains a major public health challenge. Figure 17 presents the latest data on the increases in childhood obesity in the United States between 1971-1974 and 2017-2018.[79] By 2017-2018, the prevalence of childhood obesity reached 19.3% while the prevalence of severe obesity reached 6.1%.[79] The fact that 1 in 5 children now live with obesity (as of 2017-2018) is cause for concern, especially when considering the dramatic increases in BMI observed during the COVID-19 pandemic as described in the prior section.

Figure 17. Prevalence of obesity and severe obesity in 2-19 year-old children and adolescents, United States, 1971-1974 to 2017-2018.[79]



There is evidence of household income disparities in health-related physical fitness. A recent study, which used data from the 2012 NNYFS, demonstrated that children with higher socioeconomic status had a better composite fitness profile (consisting of musculoskeletal fitness, body composition, and cardiorespiratory fitness) compared to children with low and moderate socioeconomic status.[80] Similarly, another study using data from the 2012 NNYFS showed that girls from lower income households had significantly lower cardiorespiratory endurance and core muscle strength compared to those from the highest income households.[81] These data corroborate those for fitness-related behaviors such as MVPA.

Recommendations:

- There is a need to advocate for the regular surveillance of fitness levels among U.S. children and youth given that the most recent representative data on physical fitness in the population are a decade old.
- Given that increases in physical fitness are strongly linked with increases in moderate-to-vigorous levels of aerobic physical activity in children,[6] there is a need to promote and provide opportunities for children to participate in these physical activities on a regular basis.

THERE IS A NEED TO ADVOCATE FOR THE REGULAR SURVEILLANCE OF FITNESS LEVELS AMONG U.S. CHILDREN AND YOUTH GIVEN THAT THE MOST RECENT REPRESENTATIVE DATA ON PHYSICAL FITNESS IN THE POPULATION ARE A DECADE OLD.

2022 Grade: INC

FAMILY AND PEERS

Year	2014	2016	2018	2022
Grade	INC	INC	INC	INC

Indicators:

- Percentage of family members (e.g., parents, guardians) who facilitate physical activity and sport opportunities for their children (e.g., volunteering, coaching, driving, paying for membership fees and equipment).
- Percentage of family members (e.g., parents, guardians) who are physically active with their kids.
- Percentage of children and youth with friends and peers who encourage and support them to be physically active.

Key Findings

- There are no nationally representative data or benchmarks for this indicator.

Data Synthesis:

Parental and peer/friend support plays a key role in children's ability to achieve recommended levels of physical activity, through modeling, encouraging, and supporting physical activity, including play and sports and through monitoring, discouraging, and providing alternatives to sedentary behaviors like screen time. Several systematic, scoping, and umbrella reviews have been published within the past 10 years which provide evidence of the role that family members and peers play in supporting physical activity among children and youth. However, there is a lack of nationally representative data in this area, which led to an incomplete grade this year as in the previous Report Cards. Additional assessment of family and peer influence on physical activity, using nationally representative data, remains a priority for future research.

Perceived level of support from family and peers may help or hinder physical activity among children. A recent systematic review, which examined factors influencing participation in physical activity in school-aged children, found that the influence of friends was the most frequently cited interpersonal factor influencing physical activity.[82] A systematic review from 2015 included 30 articles and concluded that parental encouragement and support can also increase physical activity among children.[83] In addition, parental behaviors like reducing parent's screen time can reduce children's screen time, which could be even more beneficial if reduced screen time is replaced with parental support and encouragement for physical activity.[83] Parents and peers may also serve as barriers to a child's physical activity through bullying, restricting time for outdoor play and physical activity opportunities, or modeling

sedentary behaviors instead of activity. The previously mentioned review found that lack of support from friends and parents was related to lower physical activity participation among children.[82] Less is known about parental and peer influence on physical activity participation among children and youth with disabilities. A recent review found correlations between parental support and physical activity behaviors among children, but the level of influence varied by disability type and was not consistent across all studies.[84] Reviews of facilitators and barriers to physical activity suggest that support from parents and peers is important for children and youth with disabilities.[85,86]

Family and peers support children's physical activity by providing information and encouragement, discussing types of activity and the benefits of being active, modeling or sharing in physical activity, providing input about preferred activities for children, and limiting screen time. Additionally, parents can help their child be more active by providing instrumental support, such as providing money for registration fees, transportation to activities, or physical activity equipment. A review of studies examining the influence of parental support and modeling on physical activity found positive correlations between parental engagement in different types of physical activity and parental modelling were positively associated with outdoor play.[87] Parental concerns towards outdoor play was inversely associated with outdoor play, yet unexpectedly positive family attitudes toward outdoor play and parental intention to improve outdoor play were all inversely associated with outdoor play among children. These findings may indicate an opportunity to support parents who desire more outdoor play for their children, such as improving parental perceptions of safety and increasing outdoor play opportunities in the built environment.

Data from the Canadian Health Measures Survey (2007 – 2013) showed a correlation between accelerometer-assessed moderate-to-vigorous physical activity among parents and children.[88] Every 20-minute increase in adult physical activity was associated with a 5 – 10 minute increase in children's physical activity. Among children with disabilities, parental modeling did not have a strong impact on children's physical activity, but parental perceptions of the benefits of physical activity for children was significantly associated with physical activity behaviors.[84]

In addition to modeling and supporting physical activity, parents may influence their child's physical activity through their parenting style, which encompasses the overarching attitudes and behaviors through which a parent interacts with their child, though a clear association between parenting style and children's physical activity has not been established. For example, studies have shown that both authoritative (e.g., warm and responsive, clear rules, high expectations, supportive)[89] and permissive (e.g. warm and responsive, few or no rules, indulgent, lenient)[90–92] parenting styles have been associated with higher levels of physical activity among children. Hyper-parenting, which includes overprotective "helicopter parenting"; strict "tiger mom parenting"; "concerted cultivation parenting" in which parents enroll children into several extracurricular activities; and "little emperor parenting" which gives children all the material goods they request, has been associated with decreased levels of physical activity among children between the ages of 7 and 12 years.[93] However, a recent study conducted in Sweden found no significant associations between physical activity parenting practices and children's levels of moderate-to-vigorous intensity physical activity.[94,95] Additional research is needed to further understand how parenting styles and behaviors interact to influence their children's physical activity.

As children move toward adolescence, peers may serve as increasingly important role models compared to parents.[96] As reported in the 2018 Report Card, youth engage in similar amounts of physical activity as others in their peer group, suggesting the importance of social influence.[97] More recent research found similar results among a sample of 11- and 12-year-old youth.[98] General friend support for physical activity, living in a neighborhood with similarly aged friends with whom the child can play, and friends' physical activity beliefs and participation were associated with more steps per weekday and time spent playing outside on weekdays.[98] Similar results were found for older youth aged 15 to 16 years in that friend social support was related to more time in vigorous physical activity.[99] Additional research, especially at a national scale, is necessary to better understand the influence of specific family and peer support behaviors, the importance of the support provider (i.e., parents or peers), and differences across age groups, gender, and race/ethnicity.

Recommendations:

- Invest in programs to help parents live more active lifestyles so that they are modeling positive behaviors that may increase levels of physical activity, especially among younger children.
- Invest in programs to help parents learn to engage in activities that can accommodate a range of skills and abilities to increase opportunities for parents or caregivers to engage in physical activity with children.
- Collect nationally representative data exploring the influence of family and peers on children and youth physical activity. This may be possible with a new survey or by adding surveillance questions on family and peer physical activity involvement and support behaviors to existing national surveys.
- Initiate research to improve the understanding of how specific behaviors (i.e. modeling, instrumental support, etc.) and individuals (i.e., parents or peers) influence physical activity among different age groups, genders, races/ethnicities, and socioeconomic classes.
- Initiate research to improve the understanding of how adults (other than parents) influence physical activity among different age groups, genders, race/ethnicities and socioeconomic classes (e.g., siblings, other family members, other adult caregivers, teachers, coaches, etc.).
- Conduct research examining how parenting styles and parenting behaviors (i.e., rules around outdoor playtime and screen time) influence youth physical activity to generate a more comprehensive understanding of parental influence.

INVEST IN PROGRAMS TO HELP PARENTS LIVE MORE ACTIVE LIFESTYLES SO THAT THEY ARE MODELING POSITIVE BEHAVIORS THAT MAY INCREASE LEVELS OF PHYSICAL ACTIVITY, ESPECIALLY AMONG YOUNGER CHILDREN.

2022 Grade:

D-

SCHOOL

Year	2014	2016	2018	2022
Grade	C-	D+	D-	D-

Indicators:

- Percentage of schools with active school policies (e.g., daily PE, daily physical activity, recess, "everyone plays" approach, bike racks at school, traffic calming on school property, outdoor time).
- Percentage of schools where the majority (> 80%) of students are offered the mandated amount of PE (for the given state/territory/region/country).
- Percentage of schools that offer physical activity opportunities (beyond PE) to the majority (> 80%) of their students.
- Percentage of parents who report their children and youth have access to physical activity opportunities at school in addition to PE classes.
- Percentage of schools with students who have regular access to facilities and equipment that support physical activity (e.g., gymnasium, outdoor playgrounds, sporting fields, multi-purpose space for physical activity, equipment in good condition).

Key Findings

- **Approximately 26% of high school-aged students** attend PE classes 5 days a week, and 52% attend PE classes 1 day a week (2019 YRBSS).[27]
- **The percentage of schools requiring a PE course be taught** in each grade decreases from 97% in 6th grade to 43% in 12th grade (2018 School Health Profiles).[100]
- **18.7% of children and adolescents with disabilities** are meeting the 60 minutes or more of physical activity daily recommendation.[101,102]
- **Approximately 3.6% of secondary schools** established and are implementing a Comprehensive School Physical Activity Program (2018 School Health Profiles).[100]
- **50% of secondary schools** provide regular classroom physical activity breaks during the school day beyond PE and recess (2018 School Health Profiles).[100]
- **Laws exist for elementary schools (21 states), middle schools (13 states), and high schools (9 states)** which specify and require a certain amount of physical activity be provided during the school day (Classification of Laws Associated with School Students, CLASS).[103]
- **9 states** have a codified recess law (AZ, AR, CT, FL, MO, NJ, RI, VA, and WV) and 5 more (IA, LA, NC, SC, and TX) require at least 20-30 minutes of physical activity left up to the schools as to how they allocate that time (CLASS).[103]
- **32 states** have laws that meet the Free Appropriate Public Education (FAPE) for Students with Disabilities requirement and provide that adapted physical education must be made available to every child who needs it (CLASS).[103]

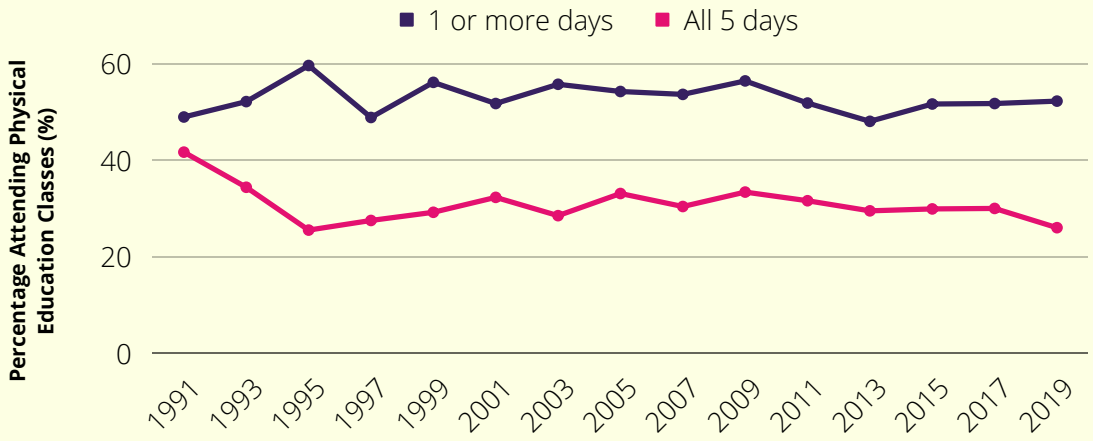
Data Synthesis:

Regular physical activity during childhood and adolescence provides numerous immediate and long-term health benefits. Regular physical activity has shown to improve academic achievement and performance, improve mental and emotional well-being, and create a sense of social connectedness to peers, which many children lost due to social isolation during the COVID-19 pandemic. However, results of various research studies and data secured through public health surveillance show that school-aged youth are not engaging in the recommended amounts of physical activity to acquire these benefits.

Moreover, COVID-19 has been tremendously disruptive for schools, severely limiting safe, inclusive, equitable and quality opportunities for youths to be physically educated and active in the school environment, before, during, and after school. The delivery of instruction varied among states, and districts within states, ranging from in-person instruction at the school site, to synchronous (on-line real-time instruction), to asynchronous (virtual at various times), and a variety of hybrid models of instruction, which compounded the issue of collecting physical activity participatory data.[104] Since schools play such a critical role in providing equitable access to physical activity opportunities, the emphasis on how to deliver instruction and engage students while at home further limited the ability to make supportive physical education and physical activity policy decisions. In a survey, parents of children 5-12 years of age who received virtual school instruction during the year 2020 were more likely to report that their children experienced a decrease in physical activity compared to those whose children received in-person instruction (62.9% v. 30.9%).[104]

The 2019 YRBSS[27] continues to show that adolescents are not meeting the federal physical activity time recommendations. This causes concerns that they will probably not, at this rate, meet the Healthy People 2030 objectives calling for increases in muscle-strengthening activity (PA-07), aerobic physical activity (PA-06), and aerobic and muscle-strengthening activity (PA-08). Additionally, the Healthy People 2030 national objectives[36] promote an increase in the proportion of adolescents who participate in daily school physical education (ECBP-01). The data; however, continue to show a decrease in the percentage of students in grades 9 through 12 who participate in daily physical education from 29.9% in 2017 to 25.9% in 2019 (Figure 18).[27] The lack of progress toward increasing the amount of daily physical activity and physical education supports the need for enhanced school policies to ensure that students are engaged daily physical education.

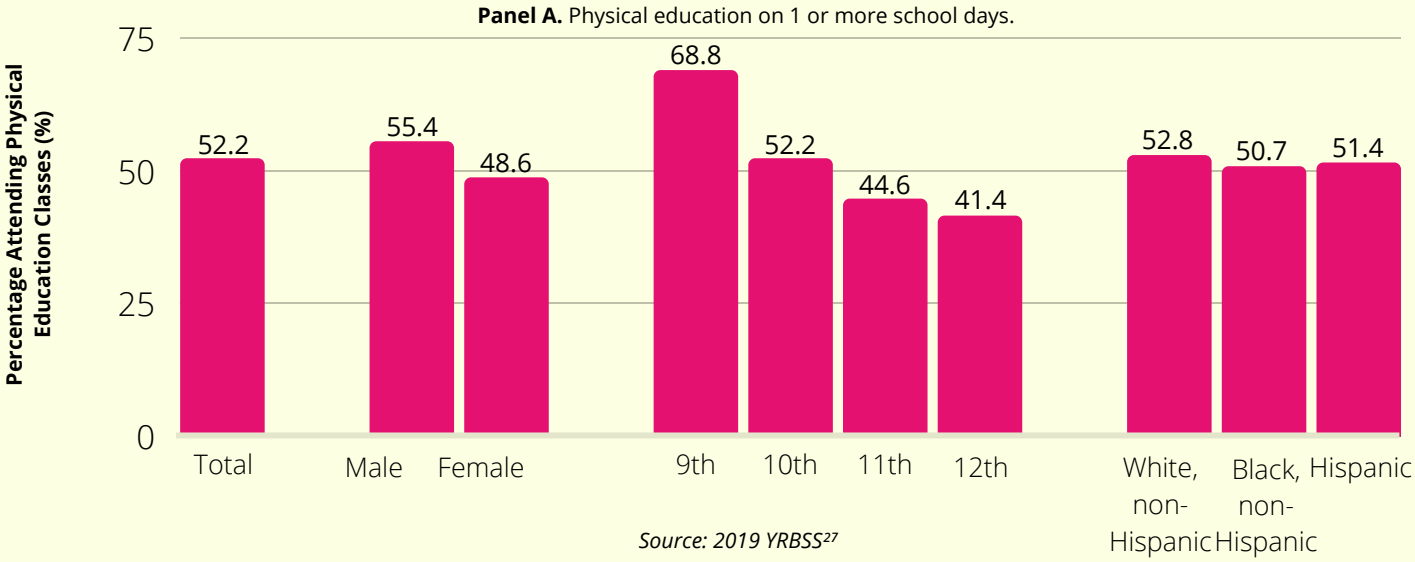
Figure 18. Percentage of high school students who attended physical education classes by year and number of days per week.



Source: 1991-2019 YRBSS[27]

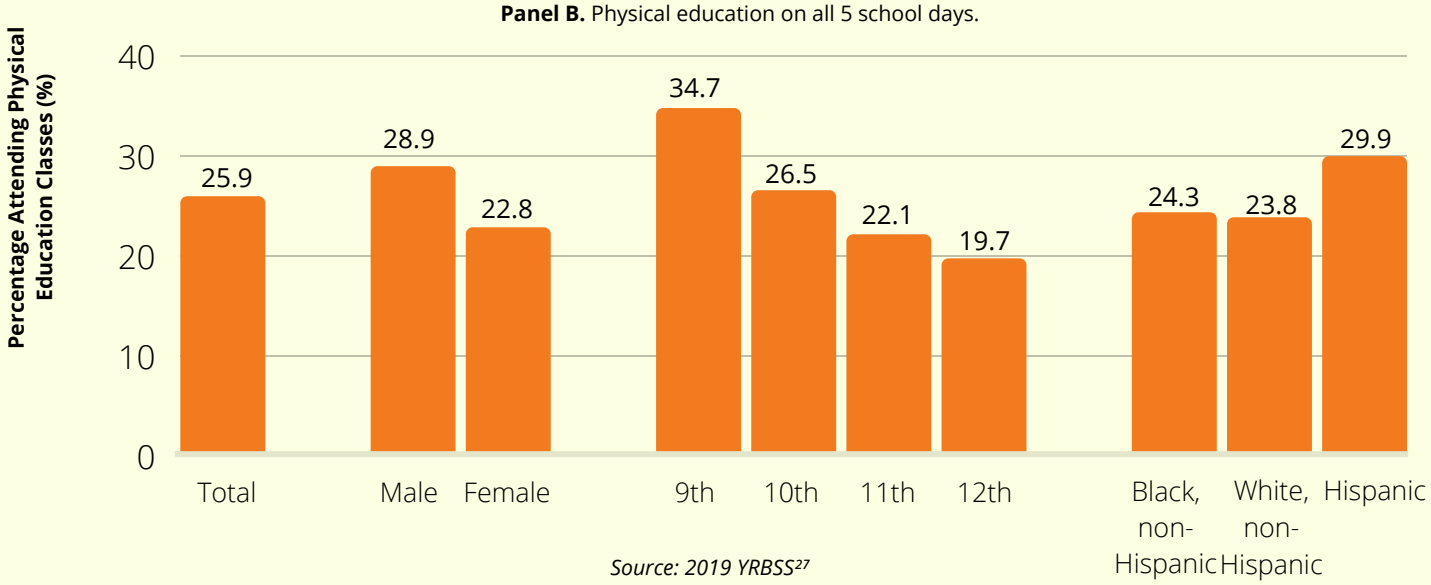
Fifty-two percent of high school students attend just 1 day of physical education per week versus 29.9% of students attending physical education on all 5 days.[27] The results of the 2019 YRBSS show a steady decline in physical education enrollment between grades 9 and 12 from 68.8% of 9th grade students attending physical education classes on at least 1 day per week to 41.4% of 12th grade students.[27] Further, boys continue to enroll in physical education at higher rates than girls, 55.4% and 48.6% respectively for 1 day per week, and 28.9% and 22.8% for 5 days per week.[27] No significant differences were shown between Black, White, and Hispanic students, attending physical education on 1 or more days per week and on all 5 days per week; although, Hispanic students (29.9%) had a higher percentage than Black (23.8%) or White students (24.3%) for all 5 days of the week.[27] (See Figure 19). With respect to youth with disabilities, the National Association of State Boards of Education reported in 2021 that 18.7% of students with special health care needs are attaining the recommended 60 minutes of physical activity daily, with 47 states having policies promoting adapted physical education. This exhibits a great need to pay targeted attention to the challenges in providing the opportunities for children and youth with disabilities to participate in physical activity before, during, and after school, including community-based programs.[102] Collectively, these findings further support a call for

Figure 19. Percentage of high school-aged adolescents who attended physical education classes by sex, grade, and race/ethnicity.



Source: 2019 YRBSS[27]

Panel B. Physical education on all 5 school days.



Source: 2019 YRBSS[27]

increased physical education and physical activity in the school setting where equitable opportunities are provided at no cost for all students.

In states or school districts where daily opportunities to achieve the 60 minutes or more of physical activity are lacking, the Whole School, Whole Community, Whole Child (WSCC) and the Comprehensive School Physical Activity Program (CSPAP), a multi-component approach for schools, should be implemented. These models and programs continue to be viable and have yielded successful, positive outcomes.[105] The percentage of secondary schools which have established and implemented CSPAPs has remained relatively stable in recent years from 3.1% in 2014 to 3.6% in 2018.[100] As schools develop these physical activity plans and wellness policies, family and community engagement should be integrated to develop equitable collaborative efforts within the context of physical activity opportunities.

Recommendations:

- State and local educational agencies should enact and adopt policies to implement the physical education and physical activity recommendations outlined by the *Physical Activity Guidelines for Americans*[6] and Healthy People 2030.[36]
- Continue, expand, and re-implement national surveillance of physical activity and physical education to monitor progress and inform policymakers.
- Conduct research to better understand gender, race/ethnicity, disability, and socioeconomic status differences in school-provided physical activity opportunities to identify disparities and to prioritize interventions to populations in need of opportunities to be physically active in the school environment.
- States and local education agencies should develop policies to hire certified and licensed physical education teachers and provide required professional development for physical education to implement a standards-based instructional program and provide professional development opportunities for classroom teachers to provide safe, and age-appropriate physical activity classroom breaks.
- Use the school's role as the community hub to share physical education and physical activity messaging and resources for parents as they play a vital role in ensuring that their children receive the recommended amount of physical education and physical activity in the school environment.
- Build cross-sector partnerships to implement inclusive physical activity and sports programs for youth with disabilities.

CONTINUE, EXPAND, AND RE-IMPLEMENT NATIONAL SURVEILLANCE OF PHYSICAL ACTIVITY AND PHYSICAL EDUCATION TO MONITOR PROGRESS AND INFORM POLICYMAKERS.

2022 Grade: C

COMMUNITY AND BUILT ENVIRONMENT

Year	2014	2016	2018	2022
Grade	B-	B-	C	C

Indicators:

- Percentage of communities/municipalities that report they have infrastructure (e.g., sidewalks, trails, paths, bike lanes) specifically geared toward promoting physical activity.
- Percentage of children or parents who report having facilities, programs, parks and playgrounds available to them in their community.
- Percentage of children or parents who report living in a safe neighborhood where they can be physically active.
- Percentage of children or parents who report having well maintained facilities, parks and playgrounds in their community that are safe to use.

Key Findings

- **Approximately 75% of 6 to 17 year-old children** live in a neighborhood with sidewalks or walking paths (2019-2020 NSCH).[25]
- **Approximately 75% of 6 to 17 year-old children** live in a neighborhood with a park or playground area (2019-2020 NSCH).[25]
- **Approximately 65% of 6 to 17 year-old children** live in a safe environment; however, there are disparities in this indicator: 72% of White children, 57% of Black children and 56% of Hispanic children live in safe environments (2019-2020 NSCH).[25]
- **Approximately 70% of states** have a Complete Streets policy or policies (2020 Safe Routes Partnership Report Card).[106]
- **Approximately 42.7% of communities** have access to public transit (2021 EPA National Walkability Index).[107]

Data Synthesis

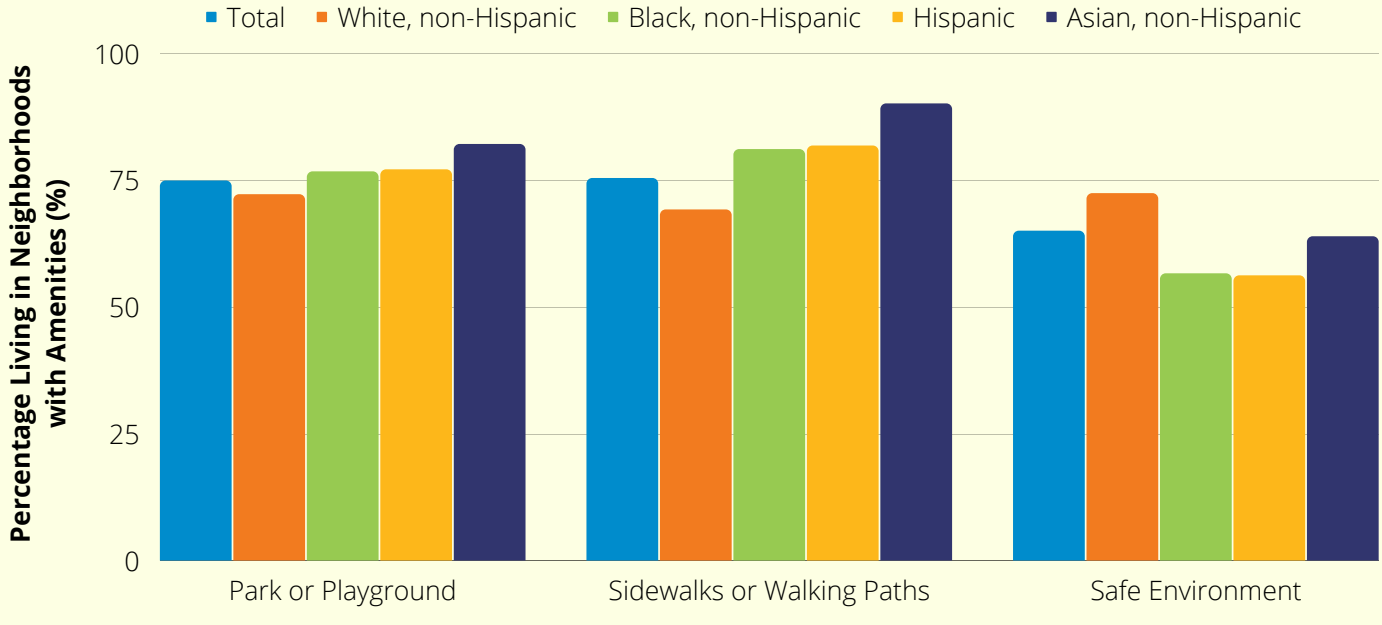
Multiple settings and environments play an important role in children's physical activity, including neighborhoods, parks and recreation areas, schools, and homes. Within these settings, environments that support physical activity are those that provide spaces, equipment, and facilities for activity and limit sedentary opportunities. Both access to and the quality of such settings is important.[108,109] For example, children need access to safe parks and those parks need to have ample facilities and amenities that are of high quality. Most public health surveillance systems that capture aspects of the community and environment focus on neighborhood environments, and numerous recommendations from U.S. public health authorities point to the need to create neighborhood environments that

are more supportive of physical activity.[36,110] The primary indicators for the 2022 grade for the Community and Built Environment were sidewalk access, park access, neighborhood safety, and walkability/opportunities for walking.

The 2019-2020 NSCH data show little to no improvements in sidewalk access, park access, and neighborhood safety since 2016.[25] The percent of children living in a neighborhood with a park or playground area decreased slightly from 77% in 2016 to 75% in 2020, but this change was likely due more to knowledge and perceptions of the NSCH survey respondents than to an actual decrease in the number of parks in the U.S. The percent of children living in a neighborhood with sidewalks or walking paths was 75% in both 2016 and 2020, and the percent of children living in a safe neighborhood was also similar across years (64% in 2016 and 65% in 2020). Unfortunately, racial/ethnic disparities continue to exist in neighborhood safety, with 72% of non-Hispanic white children but only 57% of Black children and 56% of Hispanic children living in safe neighborhoods (Figure 20). Though there has been some improvement since 2016, during which time 53% and 54% of Black and Hispanic children lived in a safe neighborhood, respectively, the magnitude of these disparities warrants more efforts that address safety concerns in structurally disadvantaged communities which are known to have experienced disinvestment both historically and currently.[25]

Fewer children and youth with disabilities live in a safe environment compared to the full 2019-2020 NSCH sample (55.6% vs. 65%). The racial/ethnic disparities persist within this group; 62.3% of non-Hispanic white children with disabilities live in a safe environment but only about 50% of Hispanic and African American children with disabilities report living in a safe environment. There are no notable differences in the percent of children with disabilities who live in a neighborhood with sidewalks or parks; however, the accessibility of paths, parks, and playground amenities for children with disabilities is not well-studied. The influence of these environmental indicators on physical activity may be altered among children and youth with some conditions, such as visual impairments, autism spectrum disorder, and mobility impairments, since their interactions in community spaces and facilities may differ from children without a disability.[111,112]

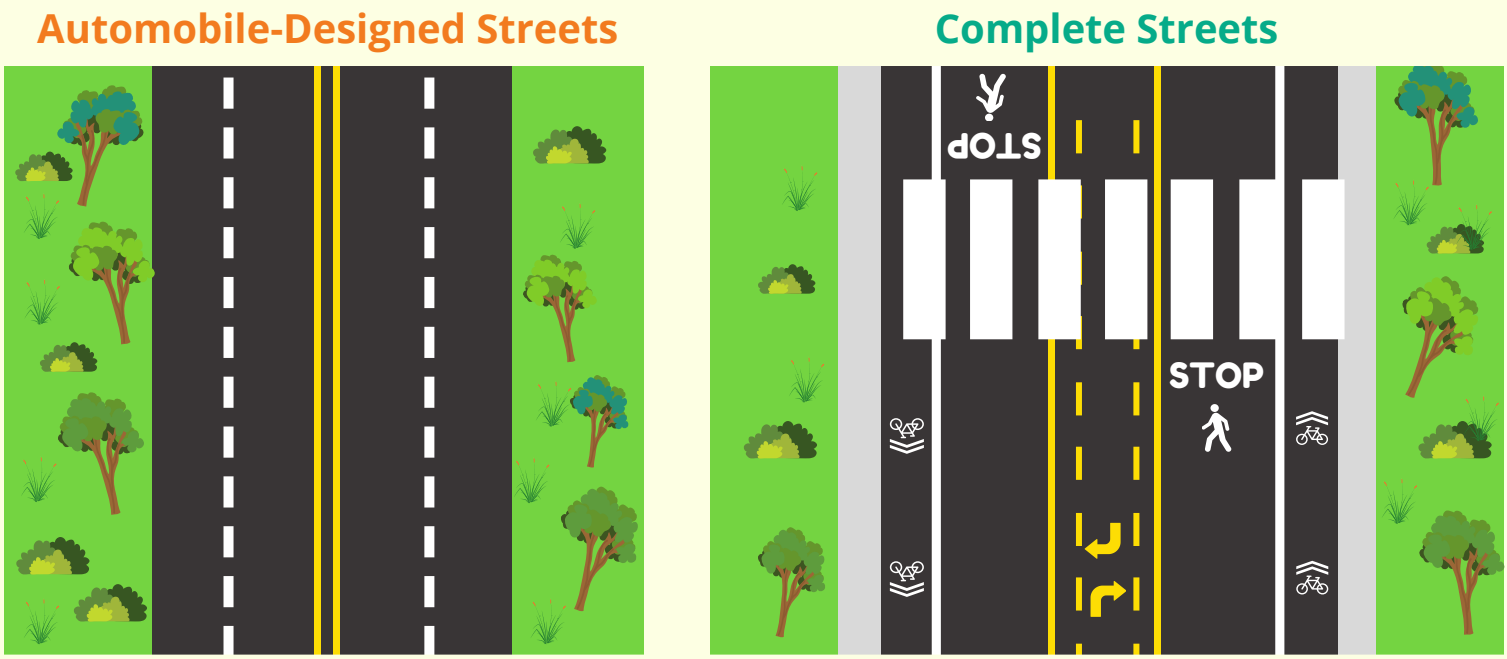
Figure 20. Percentage of children and adolescents aged 6-17 years living in neighborhoods with certain characteristics, overall and by race/ethnicity.



Source: 2019-2020 NSCH[25]

There appears to have been progress at the state level around some community design efforts that impact children's physical activity, as the number of U.S. states with Complete Streets policies has increased over recent years. Complete Streets are walkable streets that prioritize safety, comfort, and access for community residents using various modes of transportation, including walking and cycling. Complete Streets make it easy to cross the street, provide protection from vehicles, and support children to walk to school, all improving equity and public health (Figure 21).[113] In 2016, 64% of states had a strong core state Complete Streets commitment,[114] which evolved into 66% of states having adopted a Complete Streets policy or policies by 2018[115] and 70% of states having adopted a Complete Streets policy or policies by 2020.[106] However, several factors impact the extent to which these policies can lead to widespread action at the ground level, including funding. The passing of the U.S. Infrastructure Investment and Jobs Act makes now an opportune time to advocate for the prioritization of children's health in all transportation projects through Complete Streets.

Figure 21: Streets Designed for Automobiles and Complete Streets Designed for Multiple Users



The image on the right shows examples of features included in a Complete Street, such as a dedicated space in the middle for public transit, protected bike lanes, sidewalks that are buffered from vehicles, and a high visibility raised crosswalk for pedestrian crossing and traffic calming.

Source: Adapted from Smart Growth America and National Complete Streets Coalition[116]

In 2021, the U.S. Environmental Protection Agency updated their National Walkability database from 2013.[107] Between 2013 and 2021, U.S. communities became slightly more walkable, on average. For example, street connectivity, which is important for creating walkable distances between locations, increased from an average of 63.3 to an average of 78.3 pedestrian-oriented street intersections per square mile of land, and the proportion of communities with access to public transit increased from 32.7% to 42.7%.[107] At least part of the increase in the number of pedestrian-oriented street intersections may be attributable to the Complete Streets movement mentioned above, providing some evidence that such policy efforts may be leading to meaningful improvements in community design features that are detectable in available surveillance systems. Yet, more efforts are needed to create robust improvements in these community design features, as research evidence suggests an

accumulation of community design improvements, rather than single and/or geographically sparse improvements, are needed to support meaningful increases in physical activity at the population level.[117]

The grade of C for the Community and Built Environment considers multiple aspects of the community environment, including sidewalk access, park access, neighborhood safety, and walkability or opportunities for walking. Together, these data suggest there has been some movement towards improving community environments to better support children's physical activity and health, but there are substantial opportunities to accelerate and scale-up implementation of community development approaches.[118,120] Such approaches involve smart growth, Complete Streets, and other pedestrian-oriented development, including diversifying housing options, using infill development on empty or underutilized lots, incorporating mixed land use into new developments, and connecting pedestrian/bicycle transportation systems to areas with land use diversity. In scaling up such approaches, it is critical to consider housing affordability and prevent displacement due to increased housing values/costs, particularly in communities that have historically faced disinvestment and health inequities due to structural barriers. Strategies to support neighborhood development without displacement include inclusionary zoning policies (e.g., affordable housing set-asides), incentive programs (e.g., tax incentives), homeownership programs, and rent regulation policies.[121]

Recommendations:

- Involve community residents and leaders in decision-making processes.
- Support communities that have experienced disinvestment but plan and implement projects carefully to prevent displacement.
- Combine multiple approaches to creating activity-friendly communities for supporting cumulative impacts on children's overall physical activity.
- Emphasize all users when designing transportation infrastructure, particularly those whose needs have not been met through a traditional transportation approach.
- Evaluate environmental improvement projects from an equity lens that considers all residents of the community, including impacts on residents' ability to meet basic needs of living.

COMBINE MULTIPLE APPROACHES TO CREATING ACTIVITY-FRIENDLY COMMUNITIES FOR SUPPORTING CUMULATIVE IMPACTS ON CHILDREN'S OVERALL PHYSICAL ACTIVITY.

GOVERNMENT STRATEGIES AND INVESTMENTS

At all levels, government is becoming increasingly involved in promoting physical activity and healthy living among children and youth. This year, several of the federal, state, and local efforts to support physical activity and active living are highlighted, including the Centers for Disease Control and Prevention (CDC)'s Active People, Healthy Nation Initiative, state policies related to physical education and school wellness, and the CDC's Active Communities Tool (ACT).

Federal

Active People, Healthy Nation[122] is a national initiative led by the CDC to help 27 million Americans become more physically active by the year 2027. Active People, Healthy Nation seeks to move approximately 2 million youth from some physical activity to meeting the minimum aerobic physical activity guideline by being physically active for at least 60 minutes every day.[145] The initiative provides professionals with tools for action to encourage physical activity in different sectors (Table 5). The tools for action in the education sector provides resources and strategies for education professionals to encourage physical activity in and around schools, including an assessment tool to help school districts and staff create healthier out-of-school environments for kids, evidence-based strategies to promote and plan classroom physical activity, and other tools to help individuals in the education sector support physically active lifestyles. More information about the Active People, Healthy Nation initiative as well as the education and other sector resources can be found on the CDC's website at:
https://www.cdc.gov/physicalactivity/activepeoplehealthynation/everyone-can-be-involved/index.html

Table 5. Sectors in which Active People, Healthy Nation provides tools and strategies to increase physical activity and an example of each.

Active People, Healthy Nation Sectors	Example*
Arts and Culture	Add public art to improve pedestrian infrastructures
Employers	Implement a worksite wellness program to promote activity among employees
Parks, Recreation, and Green Spaces	Set up shared-use agreements with schools and other places to increase public access to places to be active
Education	Create and implement a Comprehensive School Activity Plan
Government	Provide education and awareness campaigns to promote physical activity.
Health Care	Establish physical activity as a key health indicator tracked by electronic health records
Land Use and Community Design	Incorporate mixed land use developments by combining residential, commercial, recreational, and educational land uses.
Public Health	Collect physical activity data to measure and monitor changes over time
Sports and Fitness	Offer free or low-cost youth sports programs to improve equity in physical activity opportunities
Transportation	Incorporate infrastructure and amenities to make walking and biking safer (i.e., sidewalks, lighting, median islands, etc.)
Nonprofit	Strategies to be developed. Check the website for updates.
Mass Media	Strategies to be developed. Check the website for updates.

*See the website for additional examples on how each sector can support physical activity

Source: CDC's Active People, Healthy Nation[122]

The ***Physical Activity Guidelines for Americans 2nd edition*** (2018)[6] is based on the most current scientific evidence and provides guidance for the public on improving their health through participation in regular physical activity. It discusses the proven benefits of physical activity and the importance of physical activity in reducing the burden of chronic disease in our country. The Guidelines serve as a resource for health professionals and policy makers and as a foundation for governmental physical activity and education programs. A chapter of the guidelines (Chapter 3) is dedicated to active children and adolescents, providing age-specific recommendations based on the scientific evidence review (Table 6).

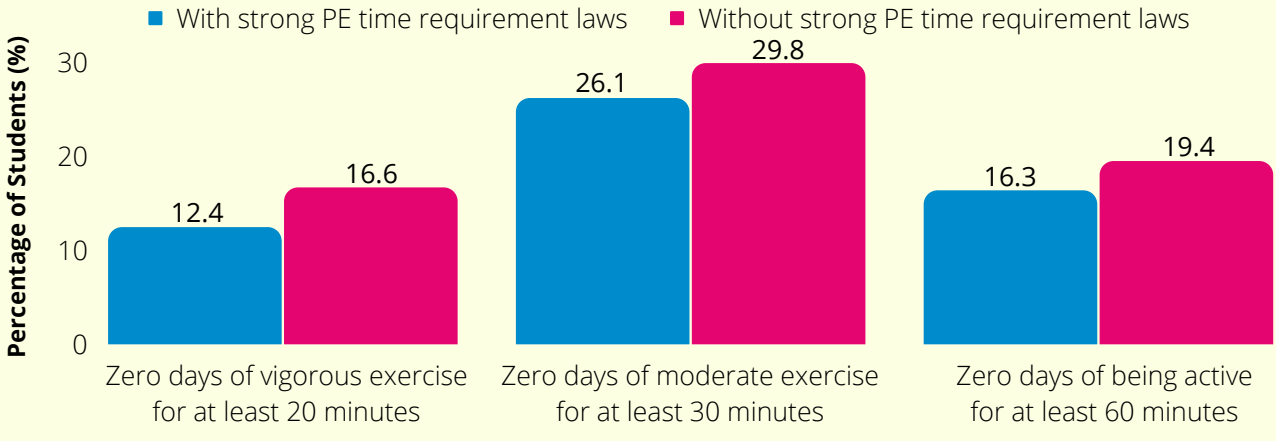
Table 6. Key Guidelines for School-Aged Children and Adolescents[6]
Children and adolescents should be provided with opportunities and encouragement to participate in a variety of age-appropriate and enjoyable physical activities.
Children and adolescents ages 6 through 17 years should participate in at least 60 minutes (1 hour) of moderate-to-vigorous physical activity every day, including: • **Aerobic:** Most of the 60 minutes or more per day should be moderate- and vigorous-intensity aerobic physical activity and should include vigorous-intensity physical activity on at least 3 days per week. • **Muscle-strengthening:** Muscle-strengthening physical activity should be included on at least 3 days per week as part of the 60 minutes or more of daily physical activity. • **Bone-strengthening:** Children and adolescents should include bone-strengthening physical activity on at least 3 days per week as part of the 60 minutes or more of daily physical activity.

State

In schools, physical education (PE) has long been considered an essential part of students' education by teachers, policymakers, and researchers. PE is designed to develop the knowledge, skills, and behaviors for physical activity, physical fitness, and motor skills in students. PE lays the groundwork for students to be physically active during the time that they spend at school and beyond.[123] Students' participation in PE during the school day is a primary opportunity for them to engage in physical activity, so advocates have long considered laws that govern PE at schools as a mechanism for increasing the amount of time students spend in PE and physical activity at school.

A study evaluating the association between state PE laws and student physical activity found a positive relationship among the presence and the strength of PE laws with the proportion of students enrolled in PE.[124] Students living in states with strong PE laws (requiring at least 90 minutes of PE per week) were more likely to have at least 1 day of physical activity for at least 60 minutes compared to students living in states with no or weak state PE laws. Strong state PE time requirements increased the likelihood of students engaging in physical activity or playing sports during PE among both boys and girls.[124] Figure 22 shows the association between student physical activity and states with strong PE time requirement laws.

Figure 22. Percentage of engaging in no days of physical activity among U.S. students, by intensity of activity and the status of state physical education laws.



Source: Adapted from Lin, et al.[124]

In 2019, Child Trends partnered with the Institute for Health Research and Policy of the University of Illinois Chicago, EMT Associates, Inc., and the National Association of State Boards of Education to publish the first comprehensive analysis to explore codified state statutes and regulations covering each of the 10 domains of the Whole Schools, Whole Community, Whole Child (WSCC) framework for healthy schools.[125] The inherent role that schools play in promoting students' physical, mental, and social health is increasingly being recognized by state policymakers, and at least some healthy school topics are covered in codified statutes and regulations in all states. However, such coverage varies considerably across states. The key findings for school year 2019-2020 can be found at: https://www.childtrends.org/ publications/using-policy-to-create-healthy-schools

Local

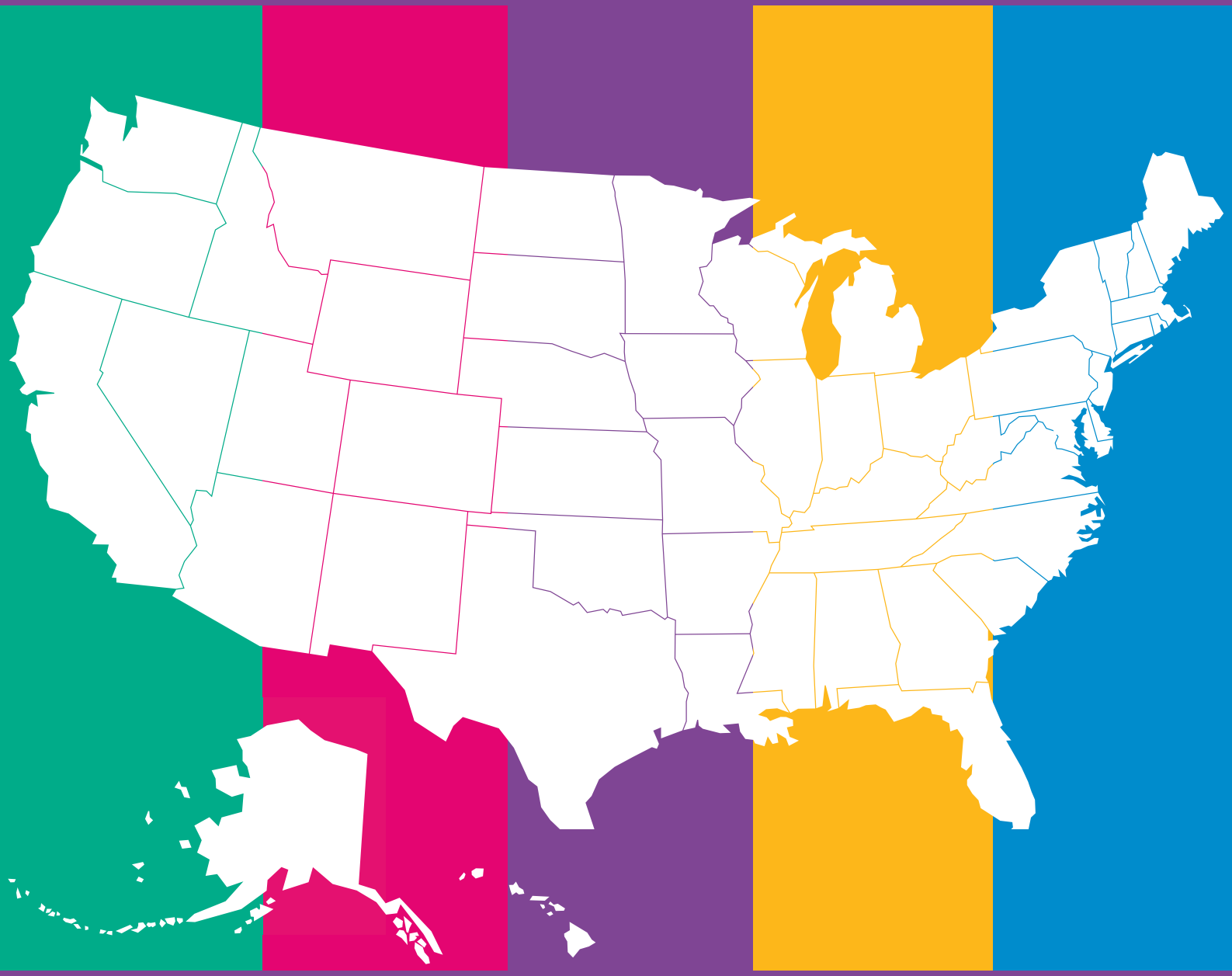
The CDC's **Active Communities Tool (ACT)**: An Active Planning Guide and Assessment Modules to Improve Community Built Environments to Promote Physical Activity was developed for communities seeking to improve their built environment in order to provide individuals of all ages and abilities with access to safe and convenient locations to engage in physical activity.[126] The toolkit features 6 modules to address specific areas for action or engagement within a community to encourage more physical activity. The focus areas include street design and connectivity, infrastructure to accommodate pedestrians, public transportation, land use planning, parks and recreational facilities, and schools. More information and all of the modules can be found at: https://www.cdc.gov/physicalactivity/community-strategies/active-communities-tool/index.html

Recommendations

The following recommendations are compiled from the Decisions to Act: Investing in Physical Activity to Enhance Learning and Health Research Report[127] and the World Health Organization's Global Action Plan on Physical Activity.[128]

- Provide low-resourced schools with technical assistance to support grant writing related to enhancing their physical activity (PA) and PE provision.[127]
  - By providing mini-grants and technical assistance to staff and community members, funding agencies have the ability to improve the grant writing capacity of low-resourced schools.[127]
  - This will be especially needed as long as budget appropriations for PE and PA are not included in policies.[127]
- Incorporate provisions for funding allocations, implementation guidelines, and compliance measures in PA/PE policies.[127]
  - Policies for PA/PE must contain funding allocations in order for schools to establish and sustain PA practices throughout time.[127]
  - Funds can be used to cover the cost of employees (e.g., district-wide PA resource staff and PE teacher positions in schools) as well as PA-related resources including equipment, facilities, and supplies.[127]
- Implement best practice communication campaigns in conjunction with community-based initiatives to raise awareness, knowledge, and understanding of the various health advantages of regular physical activity and less sedentary behavior, for individual, family, and community well-being, based on ability.[128]
  - Support and collaborate across states/regions to implement national, regional, and worldwide physical activity campaigns to broaden the reach and effect of campaigns.[128]
- Regularly implement mass-participation activities in public spaces that engage the entire community to provide free access to enjoyable, affordable, and culturally acceptable physical activity experiences.[128]
  - Implement free, universally accessible, whole-community events that provide an opportunity to be active in local public areas and that aim to foster positive experiences and improve competencies, especially among the least active members of the community.[128]
  - Collaborate with stakeholders to develop tools and resources to assist states/regions in implementing mass participation initiatives in public spaces, including case studies and a menu of cost-effective solutions that can be adapted to all regions.[128]
- Develop and support highly connected neighborhoods that enable and promote walking, cycling, other forms of active transportation that increase physical activity, including for children with disabilities, and the use of public transport in urban, peri-urban, and rural communities, by strengthening the integration of urban and transport planning policies that prioritize the principles of compact, mixed land use at all levels of government.[128]
  - All levels of government should prioritize walking, cycling and public transport as preferred modes of transportation in applicable transport, spatial and urban planning policies, particularly those related to urban centers, where appropriate.[128]

HOW IS YOUR STATE DOING?



Indicator	Overall Physical Activity: Active on all 7 days[25]	Sedentary Behaviors: TV, Computer, or Other Electronic Device Use ≤ 2 h/d[25]	Sleep: Slept Recommended Age-Appropriate Hours per Weeknight[25]
Alabama	25.2	58.6	66.2
Alaska	28.0	64.2	77.9
Arizona	15.0	53.2	71.1
Arkansas	24.4	55.4	59.1
California	18.5	56.1	69.0
Colorado	25.0	59.4	66.8
Connecticut	22.6	56.1	66.1
Delaware	19.6	51.9	65.5
Florida	20.0	57.8	67.6
Georiga	24.9	57.4	62.7
Hawaii	15.7	56.7	57.9
Idaho	24.0	65.2	69.4
Illinois	21.8	56.0	73.0
Indiana	22.3	61.5	63.4
Iowa	24.7	62.7	72.0
Kansas	26.5	61.2	67.1
Kentucky	24.8	59.0	65.8
Louisiana	22.4	51.1	61.4
Maine	27.9	68.1	71.9
Maryland	20.7	57.1	66.9
Massachusetts	17.9	58.3	70.6
Michigan	23.9	61.9	69.9
Minnesota	23.1	63.4	76.4
Mississippi	26.8	56.0	64.5
Missouri	24.8	59.1	67.1
Montana	26.3	66.3	73.2
Nebraska	23.7	64.1	67.5
Nevada	14.6	48.1	70.8
New Hampshire	24.1	57.2	67.0
New Jersey	16.2	55.6	68.7
New Mexico	22.5	59.6	67.5
New York	19.8	56.9	61.8
North Carolina	18.0	58.5	68.0
North Dakota	31.4	62.5	72.2
Ohio	24.1	62.5	64.8
Oklahoma	23.0	61.2	62.1
Oregon	21.1	57.5	76.5
Pennsylvania	24.6	60.0	72.9
Rhode Island	22.0	59.4	70.2
South Carolina	19.2	56.5	67.2
South Dakota	22.3	62.4	66.7
Tennessee	22.0	58.3	62.2
Texas	14.1	54.2	69.5
Utah	18.5	59.6	74.5
Vermont	23.6	64.4	72.2
Virginia	21.6	58.6	69.5
Washington	23.1	61.4	72.8
West Virginia	24.4	58.1	64.4
Wisconsin	23.0	63.1	76.4
Wyoming	30.7	66.9	66.8
District of Columbia	19.8	64.0	61.8
American Samoa	-	-	-
Guam	-	-	-
Marshall Islands	-	-	-
Northern Mariana Islands	-	-	-
Palau	-	-	-
Puerto Rico	-	-	-

Indicator	Sports Participation: Played on ≥ 1 sports team/y[127]	Fitness: Overweight or Obese[25]	School: Attended PE class 5 days/week[27]
Alabama	53.2	36.9	25.7
Alaska	-	32.4	17.0
Arizona	48.4	26.6	31.9
Arkansas	50.6	36.2	16.7
California	-	30.4	26.4
Colorado	61.4	25.1	15.7
Connecticut	-	30.9	-
Delaware	-	38.1	-
Florida	45.5	32.8	21.3
Georiga	48.5	34.4	-
Hawaii	49.9	28.3	8.5
Idaho	58.8	29.2	20.6
Illinois	59.3	32.5	60.8
Indiana	-	31.5	-
Iowa	61.4	33.1	12.1
Kansas	60.6	30.8	20.0
Kentucky	45.9	39.0	17.8
Louisiana	47.8	37.3	25.8
Maine	-	26.8	4.6
Maryland	-	29.4	14.9
Massachusetts	-	24.1	22.8
Michigan	-	32.1	24.1
Minnesota	-	24.0	-
Mississippi	55.8	38.4	24.5
Missouri	-	31.3	26.9
Montana	60.8	24.3	32.8
Nebraska	-	28.0	28.1
Nevada	46.8	30.2	22.1
New Hampshire	-	26.6	-
New Jersey	-	30.9	-
New Mexico	-	33.5	24.3
New York	-	32.3	17.4
North Carolina	-	33.9	23.0
North Dakota	-	26.9	35.0
Ohio	57.1	38.0	-
Oklahoma	55.4	32.3	28.1
Oregon	-	31.5	-
Pennsylvania	54.9	29.5	26.1
Rhode Island	-	33.4	12.3
South Carolina	46.9	35.6	13.1
South Dakota	-	34.7	19.5
Tennessee	48.1	36.9	20.2
Texas	48.5	37.1	35.1
Utah	58.7	22.8	13.7
Vermont	-	27.8	-
Virginia	-	29.6	-
Washington	-	29.7	-
West Virginia	51.4	41.2	27.4
Wisconsin	-	28.5	-
Wyoming	-	24.1	-
District of Columbia	50.3	29.4	-
American Samoa	-	-	-
Guam	45.7	-	45.2
Marshall Islands	-	-	-
Northern Mariana Islands	39.8	-	39.9
Palau	-	-	-
Puerto Rico	35.6	-	43.4

Indicator	School: Comprehensive School Physical Activity Plan[100]	Community & Built Environment: Sidewalks/Walking Paths[25]	Community & Built Environment: Park or Playground[25]
Alabama	3.3	52.5	52.2
Alaska	6.1	69.7	74.0
Arizona	-	86.8	80.1
Arkansas	8.7	55.2	51.2
California	3.5	90.9	84.2
Colorado	-	89.5	87.9
Connecticut	-	71.3	78.4
Delaware	0.0	73.7	71.0
Florida	5.0	75.6	72.5
Georiga	1.6	59.8	59.7
Hawaii	3.3	81.7	88.2
Idaho	6.0	75.8	73.6
Illinois	4.2	87.1	84.7
Indiana	-	70.4	65.9
Iowa	-	80.1	78.5
Kansas	0.9	76.0	77.0
Kentucky	3.5	60.0	55.5
Louisiana	-	53.0	55.5
Maine	4.4	60.6	66.2
Maryland	3.6	80.6	81.0
Massachusetts	6.0	86.7	83.9
Michigan	0.0	75.7	76.1
Minnesota	2.3	80.4	85.5
Mississippi	6.1	41.1	47.2
Missouri	3.9	65.5	67.7
Montana	3.0	69.0	68.7
Nebraska	3.7	88.2	79.4
Nevada	2.2	90.9	78.6
New Hampshire	10.8	62.1	74.3
New Jersey	3.6	85.1	89.5
New Mexico	3.9	81.1	77.9
New York	3.1	83.8	86.7
North Carolina	3.4	53.6	54.0
North Dakota	5.3	79.7	81.7
Ohio	1.0	74.3	75.0
Oklahoma	1.9	55.6	62.8
Oregon	2.0	83.2	80.1
Pennsylvania	1.0	73.1	79.1
Rhode Island	3.3	76.5	80.5
South Carolina	4.4	51.4	53.4
South Dakota	1.1	81.1	76.9
Tennessee	5.3	52.6	57.6
Texas	8.0	73.3	72.8
Utah	2.5	91.8	89.7
Vermont	12.3	64.1	74.7
Virginia	1.5	72.1	72.3
Washington	5.6	78.1	78.7
West Virginia	9.7	51.5	54.4
Wisconsin	4.5	72.2	79.8
Wyoming	-	79.7	78.5
District of Columbia	8.0	98.8	90.3
American Samoa	-	-	-
Guam	0.0	-	-
Marshall Islands	-	-	-
Northern Mariana Islands	10.0	-	-
Palau	-	-	-
Puerto Rico	-	-	-

2022 Report Card Development and Data Sources

An interdisciplinary team of scientists and professionals compiled the available resources to determine this year's grades. Several sources of data were available to inform the grades:

Classification of Laws Associated with School Students (CLASS)[103]

CLASS uses a standard scoring system to code state laws as they compare to national standards and recommendations for physical education and nutrition. CLASS scores are available overall and by school level (elementary, middle, and high school). Scores and policy maps by state are available for 11 physical education-related and 21 nutrition-related policy areas. CLASS data are regularly updated with the most recent information from 2003-2018. Data are available in a summary format or for download for analysis. For more information on CLASS, please visit: https://class.cancer.gov/.

Environmental Protection Agency (EPA) National Walkability Index[107]

The EPA developed the National Walkability Index, which is a nationwide geographic data resource that ranks block groups according to their relative walkability. Every block group in the United States is assigned a National Walkability Index Score based on built environment measures that affect people's choice of walking as a mode of transportation. Scores range from 1 (least walkable) to 20 (most walkable). The data are available for viewing on an interactive map online or for download and analysis. For more information on the National Walkability Index, visit: https://www.epa.gov/smartgrowth/national-walkability-index-user-guide-and-methodology.

National Household Travel Survey (NHTS)[34,37,38]

The NHTS is the only nationally representative survey that collects detailed information on Americans' transportation patterns to inform national and state transportation programs and policies. The U.S. Department of Transportation Federal Highway Administration has conducted the NHTS or its predecessor the Nationwide Personal Transportation Surveys, since 1969. The most recent NHTS was conducted during 2016-2017 and collected data from 252,304 households. Data are collected on all trips taken on a randomly assigned day, including the purpose and duration of each trip, mode of transportation, time and day of the trip, vehicle occupancy, demographics of driver, vehicle characteristics, public perceptions of the transportation system, and many additional factors that may relate to transportation patterns. The 1969, 2009, and 2017 survey administrations included special sections dedicated to obtaining information on students' travel to and from school. The data included in this report are published in *Active Transportation to School: Trends Among U.S. Schoolchildren, 1969-2001*,[37] *U.S. School Travel, 2009: An Assessment of Trends* by McDonald, et al.[38] and *U.S. active school travel in 2017: Prevalence and correlates* by Kontou, et al.[34] For more information on the NHTS, please visit: http://nhts.ornl.gov/introduction.shtml

National Health and Nutrition Examination Survey (NHANES)[26]

NHANES involves a series of surveys designed to assess the health and nutritional status of adults and children in the U.S. conducted by the National Center for Health Statistics. A nationally representative sample of approximately 5,000 persons living in the U.S. is examined each year. The survey combines interviews and physical examinations. The interview includes information on demographics, socioeconomic, dietary, and health-related questions. The NHANES examination consists of medical, dental, and physiological measurements, as well as laboratory tests performed by trained medical personnel. The most recent data available from NHANES are from the 2017-20 cycle. More information on NHANES can be found at: http://www.cdc.gov/nchs/nhanes/about_nhanes.htm

NHANES National Youth Fitness Survey (NNYFS)[77]

The CDC's National Center for Health Statistics conducted the inaugural NNYFS in response to the lack of nationally representative fitness testing data of American children and youth. The NNYFS combines interviews and a battery of fitness tests designed to collect data on the fitness and physical activity levels and nutritional behaviors of U.S. children and youth between the ages of 3-15 years. The 2012 NNYFS includes a nationally representative random sample of approximately 1,500 children and youth living in the U.S. Interviews include both a family and participant questionnaire. The family questionnaire collects demographics and socioeconomic status information while the participant questionnaire includes information on dietary and other health-related behaviors and activities. Fitness measurements include anthropometric measurements, accelerometry and performance on age-specific physical activities to assess the different components of physical fitness, including body composition, cardiorespiratory endurance, musculoskeletal strength and endurance, and flexibility. Background information is derived from the NNYFS website: http://www.cdc.gov/nchs/nnyfs/about_nnyfs.htm

National Survey of Children's Health (NSCH)[25]

The NSCH is a national survey that is conducted every four years by the Maternal and Child Health Bureau within the U.S. Department of Health and Human Services, with the last survey cycle conducted in 2019-2020. Telephone numbers are called at random to identify households with one or more child less than 18 years of age. The NSCH is administered to the parent or guardian concerning one child randomly selected to be the subject of the interview. Thus, children's health measures are collected by proxy report. The NSCH collects data on over 100 indicators of children's health, including: BMI, physical activity, screen time, and the environment. Survey responses are weighted to be representative of each state and the national population. The NSCH data used in this report can be accessed at: http://childhealthdata.org/learn/NSCH

Safe Routes Partnership Report Card: Making Strides 2020[106]

The Safe Routes Partnership has produced the State Report Cards on Support for Walking, Bicycling and Active Kids and Communities every two years since 2016 with the most recent report published in 2020. The report provides information on how states are doing in their support of walking, bicycling, and active kids and communities. The report provides grade categories (Lacing Up, Warming Up, Making Strides, and Building Speed) for each state to show where progress has been made, where states are doing well, and where states can improve across four key topics: 1) Complete Streets and

active transportation policy and planning, 2) federal and state active transportation funding, 3) Safe Routes to School funding and supportive practices, and 4) active schools and neighborhoods. The report cards can be found at: https://www.saferoutespartnership.org/sites/default/files/resource_files/making-strides-2020-final.pdf.

School Health Policies and Practices Study (SHPPS)[54,59]

The CDC conducts the SHPPS, a national survey to assess school health policies and practices. In previous administrations, data were collected at the state, district, school, and classroom levels. The most recent survey cycle of SHPPS was conducted in 2016 at the school district-level using online questionnaires to obtain a nationally representative sample. In 2014, SHPPS was administered at the school and classroom levels. The data included in this report are published in the *Results from the School Health Policies and Practices Study 2016* (access at: https://www.cdc.gov/healthyyouth/data/shpps/pdf/shpps-results_2016.pdf) and the Results from the School Health Policies and Practices Study 2014 (access at: http://www.cdc.gov/healthyyouth/data/shpps/pdf/shpps-508-final_101315.pdf).

School Health Profiles[100]

School Health Profiles evaluates school health guidelines by surveying principals and health education teachers from middle and high schools across the U.S. The surveys are conducted every other year with support from the CDC's Division of Adolescent and School Health, with the most recent data available being from 2018. Among other policies, School Health Profiles monitors school health and PE, physical activity, and family and community involvement. Survey results are weighted to represent the state, district or territory from which they were sampled when at least 70% of those sampled completed the survey; unweighted data are only representative of the school-level. Information about School Health Profiles, including results, data and participation by state can be found at: http://www.cdc.gov/healthyyouth/data/profiles/index.htm

State of Play Report[49]

The Aspen Institute released the first *State of Play Report* in 2016 and the most recent report in 2020 to track trends in children and youth sports participation over time. The report includes nationally representative data on youth sports participation from the Sports & Fitness Industry Association's annual household survey and detailed information on key developments related to youth sports. It also provides grades on how well adult stakeholders are providing access to and opportunity for youth sports participation in 8 key areas: ask kids what they want, reintroduce free play, encourage sport sampling, revitalize in-town leagues, think small, design for development, train all coaches, and emphasize prevention. Data included in this report are from the *2020 State of Play* report. For more information and to read the full report, please visit: https://www.aspenprojectplay.org/state-of-play-2020/introduction

Youth Risk Behavior Surveillance System (YRBSS)[27]

The YRBSS is a school-based survey conducted by state, territorial and local education and health agencies and tribal governments. National data are collected by the CDC under the Division of Adolescent and School Health. The YRBSS is administered every other year and is designed to assess health-risk behaviors and the prevalence of obesity and asthma among middle and high school students. The sampling frame for the 2019 YRBSS consisted of all public and private schools with students in at least one of grades 9-12 in participating U.S. states and the District of Columbia. Survey results are weighted to be representative of 9th through 12th grade students in public and private schools throughout the U.S. The YRBSS data used in this report card can be accessed at: http://www.cdc.gov/healthyyouth/data/yrbs/index.htm

Methods of Data Analysis

For the 2022 Report Card, original data analyses were performed on data collected by both the NHANES and NSCH using SAS (version 9.4; SAS Institute Inc., Cary, NC). NHANES data were analyzed to inform the grades for Physical Activity, Sedentary Behaviors, Active Transportation, and Sleep. NSCH data were analyzed to provide information on children with disabilities within the indicator sections. Participants were excluded on an individual basis if they were missing data for variables used in each distinct analysis. Cases with non-positive sample weights were also excluded. Categories of BMI were established using age- and gender-specific percentiles calculated using the CDC growth charts.

SAS survey procedures were utilized to account for the stratification, clustering and unequal weighting that is a product of the complex, multistage probability designs of NHANES and NSCH.

Abbreviations and Definitions

Abbreviation	Definition
AAP	American Academy of Pediatrics
AASM	American Academy of Sleep Medicine
ACT	Active Communities Tool
BMI	Body Mass Index
CDC	Centers for Disease Control and Prevention
CLASS	Classification of Laws Associated with School Students
COVID-19	Coronavirus Disease
CSPAP	Comprehensive School Physical Activity Program
EPA	Environmental Protection Agency
FAPE	Free Appropriate Public Education
FPL	Federal Poverty Level
HHS	U.S. Department of Health and Human Services
INC	Incomplete
MVPA	Moderate-to-Vigorous Physical Activity
NHANES	National Health and Nutrition Examination Survey
NHTS	National Household Travel Survey
NNYFS	NHANES National Youth Fitness Survey
NPAP	National Physical Activity Plan
NSCH	National Survey of Children's Health
PA	Physical Activity
PE	Physical Education
SARS-CoV-2	Severe Acute Respiratory Syndrome Coronavirus 2
SHPPS	School Health Policies and Practices Study
U.S	United States
WSCC	Whole School, Whole Community, Whole Child
YRBSS	Youth Risk Behavior Surveillance System

References

1. Dentro KN, Beals K, Crouter SE, et al. Results from the United States' 2014 Report Card on Physical Activity for Children and Youth. *J Phys Act Health*. 2014;11 Suppl 1:S105-112.
2. Katzmarzyk PT, Denstel KD, Beals K, et al. Results From the United States of America's 2016 Report Card on Physical Activity for Children and Youth. *J Phys Act Health*. 2016;13(11 Suppl 2):S307-s313.
3. Katzmarzyk PT, Denstel KD, Beals K, et al. Results from the United States 2018 Report Card on Physical Activity for Children and Youth. *J Phys Act Health*. 2018;15(S2):S422-S424.
4. Tremblay MS, Gray CE, Akinroye K, et al. Physical activity of children: a global matrix of grades comparing 15 countries. *J Phys Act Health*. 2014;11 Suppl 1:S113-125.
5. Tremblay MS, Barnes JD, Gonzalez SA, et al. Global Matrix 2.0: Report Card grades on the physical activity of children and youth comparing 38 countries. *J Phys Act Health*. 2016;13(11 Suppl 2):S343-s366.
6. 2018 Physical Activity Guidelines Advisory Committee. 2018 Physical Activity Guidelines Advisory Committee Scientific Report. Washington, D.C.: U.S. Department of Health and Human Services; 2018.
7. Department of Health and Human Services. Physical Activity Guidelines Chapter 3: Active Children and Adolescents. 2018; https://health.gov/paguidelines/guidelines/chapter3.aspx. Accessed 5/17, 2018.
8. Brazendale K, Beets MW, Armstrong B, et al. Children's moderate-to-vigorous physical activity on weekdays versus weekend days: a multi-country analysis. *Int J Behav Nutr Phys Act*. 2021;18(1):28-28.
9. Li N, Zhao P, Diao C, et al. Joint associations between weekday and weekend physical activity or sedentary time and childhood obesity. *Int J Obes (Lond)*. 2019;43(4):691-700.
10. Weaver RG, Armstrong B, Hunt E, et al. The impact of summer vacation on children's obesogenic behaviors and body mass index: a natural experiment. *Int J Behav Nutr Phys Act*. 2020;17(1):153.
11. Brazendale K, Beets MW, Weaver RG, et al. Understanding differences between summer vs. school obesogenic behaviors of children: the structured days hypothesis. *Int J Behav Nutr Phys Act*. 2017;14(1):100-100.
12. Tanskey LA, Goldberg J, Chui K, Must A, Sacheck J. The state of the summer: a review of child summer weight gain and efforts to prevent it. *Curr Obes Rep*. 2018;7(2):112-121.
13. Lange SJ, Kompaniyets L, Freedman DS, et al. Longitudinal trends in body mass index before and during the COVID-19 pandemic among persons aged 2-19 years - United States, 2018-2020. *MMWR Morb Mortal Wkly Rep*. 2021;70(37):1278-1283.
14. Weaver RG, Hunt ET, Armstrong B, et al. COVID-19 Leads to accelerated increases in children's BMI z-score gain: an interrupted time-series study. *Am J Prev Med*. 2021;61(4):e161-e169.
15. Burkart S, Parker H, Weaver RG, et al. Impact of the COVID-19 pandemic on elementary schoolers' physical activity, sleep, screen time and diet: A quasi-experimental interrupted time series study. *Pediatr Obes*. 2022;17(1):e12846.
16. Nagata JM, Cortez CA, Dooley EE, Iyer P, Ganson KT, Pettee Gabriel K. Moderate-to-vigorous intensity physical activity among adolescents in the USA during the COVID-19 pandemic. *Prev Med Rep*. 2022;25:101685.
17. Parolin Z, Lee EK. The role of poverty and racial discrimination in exacerbating the health consequences of COVID-19. *Lancet Reg Health Am*. 2022;7:100178-100178.
18. Paterson DC, Ramage K, Moore SA, Riazi N, Tremblay MS, Faulkner G. Exploring the impact of COVID-19 on the movement behaviors of children and youth: A scoping review of evidence after the first year. *J Sport Health Sci*. 2021;10(6):675-689.
19. Oster E, Jack R, Halloran C, et al. Disparities in learning mode access among K-12 students during the COVID-19 pandemic, by race/ethnicity, geography, and grade level - United States, September 2020-April 2021. *MMWR Morb Mortal Wkly Rep*. 2021;70(26):953-958.
20. Jia P, Zhang L, Yu W, et al. Impact of COVID-19 lockdown on activity patterns and weight status among youths in China: the COVID-19 Impact on Lifestyle Change Survey (COINLICS). *Int J Obes (Lond)*. 2021;45(3):695-699.
21. Bingham DD, Daly-Smith A, Hall J, et al. Covid-19 lockdown: Ethnic differences in children's self-reported physical activity and the importance of leaving the home environment; a longitudinal and cross-sectional study from the Born in Bradford birth cohort study. *Int J Behav Nutr Phys Act*. 2021;18(1):117.

22. Lanza K, Durand CP, Alcazar M, Ehlers S, Zhang K, Kohl HW, 3rd. School parks as a community health resource: Use of joint-use parks by children before and during COVID-19 pandemic. *Int J Environ Res Public Health.* 2021;18(17):9237.
23. Perez D, Thalken JK, Ughelu NE, Knight CJ, Massey WV. Nowhere to go: Parents' descriptions of children's physical activity during a global pandemic. *Front Public Health.* 2021;9:642932.
24. Ramirez Varela A, Sallis R, Rowlands AV, Sallis JF. Physical inactivity and COVID-19: When pandemics collide. *J Phys Act Health.* 2021;18(10):1159-1160.
25. Child and Adolescent Health Measurement Initiative. *2019-2020 National Survey of Children's Health (NSCH).* Data Resource Center for Child and Adolescent Health supported by the U.S. Department of Health and Human Services and Services Administration (HRSA), Maternal and Child Health Bureau (MCHB). Retrieved from www.childhealthdata.org.
26. Centers for Disease Control and Prevention (CDC). National Center for Health Statistics (NCHS). National Health and Nutrition Examination Survey Data. Hyattsville, MD: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention; 2017-2020. https://wwwn.cdc.gov/nchs/nhanes/continuousnhanes/default.aspx?cycle=2017-2020
27. Centers for Disease Control and Prevention. *2019 Youth Risk Behavior Survey Data*. Available at: www.cdc.gov/yrbs.
28. Troiano RP, Berrigan D, Dodd KW, Masse LC, Tilert T, McDowell M. Physical activity in the United States measured by accelerometer. *Med Sci Sports Exerc*. 2008;40(1):181-188.
29. Brown DMY, McPhee PG, Kwan MY, Timmons BW. Implications of disability severity on 24-hour movement guideline adherence among children with neurodevelopmental disorders in the United States. *J Phys Act Health*. 2021;18(11):1325-1331.
30. Healy S, Foley J, Haegele JA. Physical activity, screen time, and sleep duration among youth with chronic health conditions in the United States. *Am J Health Promot*. 2020;34(5):505-511.
31. Ross SM, Smit E, Yun J, Bogart K, Hatfield B, Logan SW. Updated national estimates of disparities in physical activity and sports participation experienced by children and adolescents with disabilities: NSCH 2016-2017. *J Phys Act Health*. 2020;17(4):443-455.
32. Case L, Ross S, Yun J. Physical activity guideline compliance among a national sample of children with various developmental disabilities. *Disabil Health J*. 2020;13(2):100881.
33. Centers for Disease Control and Prevention (CDC). National Center for Health Statistics (NCHS). National Health and Nutrition Examination Survey Data. Hyattsville, MD: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention; 2015-16. https://wwwn.cdc.gov/nchs/nhanes/continuousnhanes/default.aspx?BeginYear=2015
34. Kontou E, McDonald NC, Brookshire K, Pullen-Seufert NC, LaJeunesse S. U.S. active school travel in 2017: Prevalence and correlates. *Prev Med Rep*. 2020;17:101024.
35. Prince SA, Butler GP, Rao DP, Thompson W. Evidence synthesis - where are children and adults physically active and sedentary? - a rapid review of location-based studies. *Health Promot Chronic Dis Prev Can*. 2019;39(3):67-103.
36. Office of Disease Prevention and Health Promotion. (n.d.). Healthy People 2030. U.S. Department of Health and Human Services. https://health.gov/healthypeople
37. McDonald NC. Active transportation to school: Trends among U.S. schoolchildren, 1969–2001. *Am J Prev Med*. 2007;32(6):509-516.
38. McDonald NC, Brown AL, Marchetti LM, Pedroso MS. U.S. school travel, 2009 an assessment of trends. *Am J Prev Med*. 2011;41(2):146-151.
39. Safe Routes Partnership. *Safe Routes to School: What is Safe Routes to School?* n.d.; https://www.saferoutespartnership.org/safe-routes-school/101. Accessed 5/25/2022.
40. McDonald NC, Steiner RL, Lee C, Rhoulac Smith T, Zhu X, Yang Y. Impact of the Safe Routes to School Program on walking and bicycling. *J Am Plann Assoc*. 2014;80(2):153-167.
41. Stewart O, Moudon AV, Claybrooke C. Multistate evaluation of Safe Routes to School Programs. *Am J Health Promot*. 2014;28(3_suppl):S89-S96.

42. Ragland DR, Pande S, Bigham J, Cooper JF. Ten years later: examining the long-term impact of the California Safe Routes to School program. *Transport Res Record*. 2014; 2464(1).
43. Buckley A, Lowry MB, Brown H, Barton B. Evaluating safe routes to school events that designate days for walking and bicycling. *Transport Policy*. 2013;30:294-300.
44. Larouche R, Mammen G, Rowe DA, Faulkner G. Effectiveness of active school transport interventions: a systematic review and update. *BMC Public Health*. 2018;18(1):206.
45. Voulgaris CT, Hosseinzade R, Pande A, Alexander SE. Neighborhood effects of Safe Routes to School programs on the likelihood of active travel to school. *Transport Res Record*. 2021;2675(8):10-21.
46. Young DR, Cradock AL, Eyler AA, et al. Creating built environments that expand active transportation and active living across the United States: A policy statement from the American Heart Association. *Circulation*. 2020;142(11):e167-e183.
47. Wolfe M, McDonald NC, Ussery E, George S, Watson K. Systematic review of active travel to school surveillance in the United States and Canada. *J Health Eat Act Liv*. 2021;1(3).
48. Timperio A, Ball K, Salmon J, et al. Personal, family, social, and environmental correlates of active commuting to school. *Am J Prev Med*. 2006;30(1):45-51.
49. The Aspen Institute. *State of Play 2020*. Washington, DC: The Aspen Institute;2020. https://www.aspenprojectplay.org/state-of-play-2020/introduction
50. Mandic S, Bengoechea EG, Stevens E, Leon de la Barra S, Skidmore P. Getting kids active by participating in sport and doing It more often: Focusing on what matters. *Int J Behav Nutr Phys Act*. 2012;9(1):86.
51. U.S. Department of Health and Human Services. *National Youth Sports Strategy*. Washington, DC. U.S. Department of Health and Human Services; 2019. https://health.gov/sites/default/files/2019-10/National_Youth_Sports_Strategy.pdf
52. Kim M, Jung J, Yun J. Prevalence of school-based extracurricular sport and physical activity participation among children with disabilities. *Int J Disabil Dev Educ*. 2022:1-12.
53. Hofferth SL. Changes in American children's time – 1997 to 2003. *Electron Int J Time Use Res*. 2009;6(1):26-47.
54. Centers for Disease Control and Prevention. *Results from the School Health Policies and Practices Study 2016*. Atlanta, GA: U.S. Department of Health and Human Services;2017. https://www.cdc.gov/healthyyouth/data/shpps/index.htm
55. Ginsburg KR. The importance of play in promoting healthy child development and maintaining strong parent-child bonds. *Pediatrics*. 2007;119(1):182-191.
56. Gray C, Gibbons R, Larouche R, et al. What is the relationship between outdoor time and physical activity, sedentary behaviour, and physical fitness in children? A systematic review. *Int J Environ Res Public Health*. 2015;12(6):6455-6474.
57. Veitch J, Bagley S, Ball K, Salmon J. Where do children usually play? A qualitative study of parents' perceptions of influences on children's active free-play. *Health Place*. 2006;12(4):383-393.
58. Brockman R, Jago R, Fox KR. Children's active play: self-reported motivators, barriers and facilitators. *BMC Public Health*. 2011;11:461-461.
59 Centers for Disease Control and Prevention. *Results from the School Health Policies and Practices Study 2014*. Atlanta, GA: U.S. Department of Health and Human Services;2015. https://www.cdc.gov/healthyyouth/data/shpps/index.htm
60. Ridgers ND, Stratton G, Fairclough SJ. Assessing physical activity during recess using accelerometry. *Prev Med*. 2005;41(1):102-107.
61. Robert Wood Johnson Foundation. *The State of Play*. Princeton, NJ: Robert Wood Johnson Foundation;2010. https://www.rwjf.org/en/library/research/2010/02/the-state-of-play.html
62. Centers for Disease Control and Prevention (CDC). National Center for Health Statistics (NCHS). *National Health and Nutrition Examination Survey Data*. Hyattsville, MD: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention; 2017. https://wwwn.cdc.gov/nchs/nhanes/continuousnhanes/default.aspx?BeginYear=2017

63. Tremblay MS, Aubert S, Barnes JD, et al. Sedentary Behavior Research Network (SBRN) – Terminology Consensus Project process and outcome. *Int J Behav Nutr Phys Act*. 2017;14(1):75.
64. Rideout VJ, Foehr UG, Roberts DF. Generation M2: Media in the Lives of 8- to 18-Year Olds. Menlo Park, CA: Kenry J. Kaiser Family Foundation;2010.
65. Council on Communications and Media. Media and Young Minds. *Pediatrics*. 2016;138(5).
66. Tremblay MS, Chaput JP, Adamo KB, et al. Canadian 24-hour Movement Guidelines for the Early Years (0-4 years): An Integration of Physical Activity, Sedentary Behaviour, and Sleep. *BMC Public Health*. 2017;17(Suppl 5):874.
67. Australian Government Department of Health. *Australia's Physical Activity and Sedentary Behaviour Guidelines*. 2014; http://www.health.gov.au/internet/main/publishing.nsf/content/health-pubhlth-strateg-phys-act-guidelines#apa1317. Accessed 3/15/2022.
68. Chaput JP, Carson V, Gray CE, Tremblay MS. Importance of all movement behaviors in a 24 hour period for overall health. *Int J Environ Res Public Health*. 2014;11(12):12575-12581.
69. Paruthi S, Brooks LJ, D'Ambrosio C, et al. Consensus statement of the American Academy of Sleep Medicine on the recommended amount of sleep for healthy children: Methodology and discussion. *J Clin Sleep Med*. 2016;12(11):1549-1561.
70. Chaput JP, Gray CE, Poitras VJ, et al. Systematic review of the relationships between sleep duration and health indicators in school-aged children and youth. *Appl Physiol Nutr Metab*. 2016;41(6 Suppl 3):S266-282.
71. Matricciani L, Olds T, Petkov J. In search of lost sleep: Secular trends in the sleep time of school-aged children and adolescents. *Sleep Med Rev*. 2012;16(3):203-211.
72. Gruber R, Carrey N, Weiss SK, et al. Position statement on pediatric sleep for psychiatrists. *J Can Acad Adolesc Psychiatry*. 2014;23(3):174-195.
73. Wheaton AG, Claussen AH. Short sleep duration among infants, children, and adolescents aged 4 months–17 years — United States, 2016–2018. *MMWR Morb Mortal Wkly Rep* 70(38):1315-1321. 2021;70(38).
74. Gahche J, Fakhouri T, Carroll DD, Burt VL, Wang CY, Fulton JE. Cardiorespiratory fitness levels among U.S. youth aged 12-15 years: United States, 1999-2004 and 2012. *NCHS Data Brief*. 2014(153):1-8.
75. Perna FM, Coa K, Troiano RP, et al. Muscular grip strength estimates in the U.S. population from the National Health and Nutrition Survey 2011-2012. *J Strength Cond Res*. 2016;30:867-874.
76. Centers for Disease Control and Prevention (CDC). National Center for Health Statistics (NCHS). *National Health and Nutrition Examination Survey Data*. Hyattsville, MD: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention; 2011-12. https://wwwn.cdc.gov/nchs/nhanes/continuousnhanes/default.aspx?BeginYear=2011
77. Centers for Disease Control and Prevention (CDC). National Center for Health Statistics (NCHS). *NHANES National Youth Fitness Survey Data*. Hyattsville, MD: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Health Statistics;2012. https://www.cdc.gov/nchs/nnyfs/index.htm
78. Bouchard C, Shephard RJ. Physical Activity, Fitness, and Health: The Model and Key Concepts. In: Bouchard C, Shephard RJ, Stephens T, eds. *Physical Activity, Fitness and Health.* Champaign: Human Kinetics; 1994:77-88.
79. Fryar CD, Carroll MD, Afful J. Prevalence of overweight, obesity, and severe obesity among children and adolescents aged 2–19 years: United States, 1963–1965 through 2017–2018. *NCHS Health E-Stats*. 2020.
80. Wolfe AM, Lee JA, Laurson KR. Socioeconomic status and physical fitness in youth: Findings from the NHANES National Youth Fitness Survey. *J Sports Sci*. 2020;38(5):534-541.
81. Guseman EH, Tanda R, Haile ZT. Disparities in physical fitness of 6–11-year-old children: the 2012 NHANES National Youth Fitness Survey. *BMC Public Health*. 2020;20(1):1427.
82. Hu D, Zhou S, Crowley-McHattan ZJ, Liu Z. Factors that influence participation in physical activity in school-aged children and adolescents: A systematic review from the Social Ecological Model perspective. *Int J Environ Res Public Health*. 2021;18(6).

83. Xu H, Wen LM, Rissel C. Associations of parental influences with physical activity and screen time among young children: a systematic review. *J Obes*. 2015;2015:546925.
84. Ku B, Rhodes RE. Physical activity behaviors in parents of children with disabilities: A systematic review. *Res Dev Disabil*. 2020;107:103787.
85. McGarty AM, Melville CA. Parental perceptions of facilitators and barriers to physical activity for children with intellectual disabilities: A mixed methods systematic review. *Res Dev Disabil*. 2018;73:40-57.
86. Shields N, Synnot AJ, Barr M. Perceived barriers and facilitators to physical activity for children with disability: a systematic review. *Br J Sports Med*. 2012;46(14):989-997.
87. Lee E-Y, Bains A, Hunter S, et al. Systematic review of the correlates of outdoor play and time among children aged 3-12 years. *Int J Behav Nutr Phys Act*. 2021;18(1):41.
88. Garriguet D, Colley R, Bushnik T. Parent-Child association in physical activity and sedentary behaviour. *Health Rep*. 2017;28(6):3-11.
89. Sleddens EF, Gerards SM, Thijs C, de Vries NK, Kremers SP. General parenting, childhood overweight and obesity-inducing behaviors: a review. *Int J Pediatr Obes*. 2011;6(2-2):e12-27.
90. Hennessy E, Hughes SO, Goldberg JP, Hyatt RR, Economos CD. Parent-child interactions and objectively measured child physical activity: A cross-sectional study. *Int J Behav Nutr Phys Act*. 2010;7(1):71.
91. Jago R, Davison KK, Brockman R, Page AS, Thompson JL, Fox KR. Parenting styles, parenting practices, and physical activity in 10- to 11-year olds. *Prev Med*. 2011;52(1):44-47.
92. Saunders J, Hume C, Timperio A, Salmon J. Cross-sectional and longitudinal associations between parenting style and adolescent girls' physical activity. *Int J Behav Nutr Phys Act*. 2012;9(1):141.
93. Janssen I. Hyper-parenting is negatively associated with physical activity among 7–12 year olds. *Prev Med*. 2015;73:55-59.
94. Malek ME, Norman Å, Elinder LS, Patterson E, Nyberg G. Relationships between physical activity parenting practices and children's activity measured by accelerometry with children's activity style as a moderator - A cross sectional study. *Children (Basel)*. 2022;9(2):248.
95. Carver A, Timperio A, Hesketh K, Crawford D. Are children and adolescents less active if parents restrict their physical activity and active transport due to perceived risk? *Soc Sci Med*. 2010;70(11):1799-1805.
96. Fitzgerald A, Fitzgerald N, Aherne C. Do peers matter? A review of peer and/or friends' influence on physical activity among American adolescents. *J Adolesc*. 2012;35(4):941-958.
97. Macdonald-Wallis K, Jago R, Sterne JA. Social network analysis of childhood and youth physical activity: a systematic review. *Am J Prev Med*. 2012;43(6):636-642.
98. Loucaides CA, Tsangaridou N. Associations between parental and friend social support and children's physical activity and time spent outside playing. *Int J Pediatr*. 2017;2017:7582398.
99. Hamilton K, Warner LM, Schwarzer R. The role of self-efficacy and friend support on adolescent vigorous physical activity. *Health Educ Behav*. 2017;44(1):175-181.
100. Centers for Disease Control and Prevention. *School Health Profiles 2018: Characteristics of Health Programs Among Secondary Schools*. Atlanta: Centers for Disease Control and Prevention; 2019.
101. Child and Adolescent Health Measurement Initiative. *2017-2018 National Survey of Children's Health (NSCH)*. Data Resource Center for Child and Adolescent Health supported by the U.S. Department of Health and Human Services (HRSA), Maternal and Child Health Bureau (MCHB). Retrieved from www.childhealthdata.org.
102. National Association of State Boards of Education. *Policy Update: Reengaging Students through Physical Activity*. Alexandria, VA. 2021. https://nasbe.nyc3.digitaloceanspaces.com/2021/10/Blanco-Cornett_Physical-Activity-Final.pdf
103. National Cancer Institute. *Classification of Laws Associated with School Students (CLASS)*. https://class.cancer.gov/.

104. Verlenden JV, Pampati S, Rasberry CN, et al. Association of shildren's mode of school instruction with child and parent experiences and well-being during the COVID-19 pandemic - COVID Experiences Survey, United States, October 8-November 13, 2020. *MMWR Morbid Mortal Wkly Rep*. 2021;70(11):369-376.
105. Pulling Kuhn A, Stoepker P, Dauenhauer B, Carson RL. A systematic review of multi-component Comprehensive School Physical Activity Program (CSPAP) interventions. *Am J Health Promot*. 2021;35(8):1129-1149.
106. Safe Routes Partnership. *Making Strides 2020: State Report Cards on Support for Walking, Bicycling, and Active Kids and Communities 2020*. https://www.saferoutespartnership.org/resources/report/2020-state-report-cards
107. U.S. Environmental Protection Agency. *National Walkability Index: Methodology and User Guide*. 2021. https://www.epa.gov/sites/default/files/2021-06/documents/national_walkability_index_methodology_and_user_guide_june2021.pdf
108. Carlson J, Dean, K., Sallis, J. Measures Registry User Guide: Physical Activity Environment. Washington, D.C.: *National Collaborative on Childhood Obesity Research*;January 2017.
109. Sallis JF, Owen, Neville, Fisher, Edwin B. Ecological Models of Health Behavior. In: Glanz K, Rimer, B.K., Viswanath, K., ed. *Health Behavior and Health Edication: Theory, Research, and Practice*. 4th ed. San Francisco, CA: Jossey-Bass; 2008:465-485.
110. U.S. Department of Health and Human Services. *Step it Up! The Surgeon General's Call to Action to Promote Walking and Walkable Communities*. Washington, DC: U.S. Department of Health and Human Services, Office of the Surgeon General; 2015.
111. Fiscella NA, Case LK, Jung J, Yun J. Influence of neighborhood environment on physical activity participation among children with Autism Spectrum Disorder. *Autism Res*. 2021;14(3):560-570.
112. Haegele JA, Garcia JM, Healy S. The association between neighborhood factors and physical activity and screen-time among youth with visual impairments. *Disabil Health J*. 2019;12(3):509-513.
113. Smart Growth America. *National Complete Streets Coalition*. 2022; https://smartgrowthamerica.org/program/national-complete-streets-coalition/. Accessed April 29, 2022.
114. Safe Routes Partnership. *Making Strides 2016: State Report Cards on Support for Walking, Bicycling, and Active Kids and Communities* 2016. https://saferoutespartnership.org/sites/default/files/resource_files/how_to_use_your_state_report_card_0.pdf
115. Safe Routes Partnership. *Making Strides 2018: State Report Cards on Support for Walking, Bicycling, and Active Kids and Communities 2018*. https://www.saferoutespartnership.org/resources/report/2018-state-report-cards
116. America SG, National Complete Streets Coalition. *What are Complete Streets?* https://smartgrowthamerica.org/what-are-complete-streets/. Accessed April 29, 2022.
117. Sallis JF, Cerin E, Kerr J, et al. Built environment, physical activity, and obesity: Findings from the International Physical Activity and Environment Network (IPEN) Adult Study. *Annu Rev Public Health*. 2020;41:119-139.
118. Centers for Disease Control and Prevention. *Designing Activity-Friendly Communities*. 2020; https://www.cdc.gov/nccdphp/dnpao/features/walk-friendly-communities/index.html. Accessed November 13, 2021.
119. Community Preventive Services Task Force. *Physical Activity: Built Environment Approaches Combining Transportation System Interventions with Land Use and Environmental Design*. 2016.
120. Smart Growth America. *What is smart growth?* https://smartgrowthamerica.org/what-is-smart-growth/. Accessed Jan 20, 2022.
121. Centers for Disease Control and Prevention. Health Effects of Gentrification. *Healthy Places 2009*; https://www.cdc.gov/healthyplaces/healthtopics/gentrification.htm. Accessed April 29, 2022.
122. Centers for Disease Control and Prevention. *Active People, Healthy Nation*. Physical Activity https://www.cdc.gov/physicalactivity/activepeoplehealthynation/index.html. Accessed April 29, 2022.

123. Piekarz-Porter E, Lin W, Leider J, Turner L, Perna F, Chriqui JF. State laws matter when it comes to school provisions for structured PE and daily PE participation. *Transl Behav Med*. 2021;11(2):597-603.
124. Lin W, Leider J, Shang C, Hennessy E, Perna FM, Chriqui JF. The association between state physical education laws and student physical activity. *Am J Prev Med*. 2020;58(3):436-445.
125. Chriqui JF, Stuart-Cassel, V., Temkin, D., Piekarz-Porter, E., Lao, K., Steed, H., Harper, K., Leider, J., Gabriel, A. Using policy to create healthy schools: Resources to support policymakers and advocates. *Child Trends*; 2019.
126. Centers for Disease Control and Prevention. *Active Community Tools*. 2021; https://www.cdc.gov/physicalactivity/community-strategies/active-communities-tool/index.html. Accessed Feb 8, 2022.
127. Sanchez-Vaznaugh EV, Acosta M, Geisse SJ. Decisions to Act: Investing in Physical Activity to Enhance Learning and Health. Research report. Department of Health Education, San Francisco State University; Physical Activity Research Center; 2018. Available at: https://paresearchcenter.org/project-profiles/san-francisco-state-university/.
128. World Health Organization. *Global Action Plan on Physical Activity 2018-2030: More Active People for a Healthier World*. Geneva: World Health Organization; 2018. https://apps.who.int/iris/bitstream/handle/10665/272722/9789241514187-eng.pdf