Results From New Zealand’s 2016 Report Card on Physical Activity for Children and Youth

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Background: In this article, we report the grades for the second New Zealand Report Card on Physical Activity for Children and Youth, which represents a synthesis of available New Zealand evidence across 9 core indicators. Methods: An expert panel of physical activity (PA) researchers collated and reviewed available nationally representative survey data between March and May 2016. In the absence of new data, (2014–2016) regional level data were used to inform the direction of existing grades. Grades were assigned based on the percentage of children and youth meeting each indicator: A is 81% to 100%; B is 61% to 80%; C is 41% to 60%, D is 21% to 40%; F is 0% to 20%; INC is Incomplete data. Results: Overall PA, Active Play, and Government Initiatives were graded B+; Community Environments was graded B; Sport Participation and School Environment received a C++; Sedentary Behaviors and Family/Peer Support were graded C; and Active Travel was graded C-. Conclusions: Overall PA participation was satisfactory for young children but not for youth. The grade for PA decreased slightly from the 2014 report card; however, there was an improvement in grades for built and school environments, which may support regional and national-level initiatives for promoting PA.

Keywords: active, exercise, behavior

In 2011, New Zealand committed to meeting a range of non-communicable disease (NCD) targets at the United Nations High-Level meeting on NCDs, and in 2013 agreed to an NCD Global Action Plan and monitoring Framework. The targets were adapted for New Zealand in light of local progress and priorities, including physical inactivity. Specifically, a 10% relative reduction in physical inactivity in New Zealand children by 2025 was proposed as an appropriate target, which aligns with the World Health Organization (WHO) goal (currently one-third of children and youth are insufficiently active).

In New Zealand, insufficient physical activity (PA) is the 7th leading cause of death, with total cost of physical inactivity estimated to be $1.3 billion, or approximately 1% of GDP. The New Zealand Report Card on Physical Activity for Children and Youth, which assigns grades across 9 indicators, provides an opportunity to stock take PA research in New Zealand for advocacy, policy, and program development purposes, and allows for international comparison. It is anticipated that this report card will, in time, document changes from a policy/action perspective. The second New Zealand report card has now been developed in response to the Global Matrix 2.0 initiative of the Active Healthy Kids Global Alliance. In this paper we present the grades for the 2016 New Zealand Report Card on Physical Activity for Children and Youth.

The 2016 New Zealand Report Card was developed by a panel of 7 academic PA experts from the National Institute for Health Innovation, University of Auckland, Auckland University of Technology, and University of Otago.

In line with the Global Matrix 2.0, the 2016 report card included 9 core indicators related to PA in children and youth, including Overall PA, Sedentary Behavior, Organized Sport, Active Play, Active Transportation, Family and Peer Influence, School Environment, Community and the Built Environment, and Government Initiatives. The grade for each indicator is based on the percentage of children and youth aged 5 to 18 years meeting a defined benchmark: A is 81% to 100%, B is 61% to 80%, C is 41% to 60%, D is 21% to 40%, F is 0% to 20%, and INC is incomplete data. A detailed report on the grades used for report cards has been published previously.

For the 2016 New Zealand report card, the expert panel members met either face-to-face or via teleconference to outline the purpose of the report, discuss and identify available evidence, and assign key indicators to each member. Members evaluated available evidence, including any new data that had been collected since the 2014 report card, for their respective indicator and proposed a grade. For this step, the team members reviewed national survey data and reports via websites (eg, Ministry of Health) to identify new data. Each grade was then discussed with the final expert panel before inclusion in the report card. A draft version of the report card was circulated for external consultation with PA providers and stakeholders (eg, regional sports trusts). Stakeholders were identified via existing local and national contacts and networks. Following consultation, the expert panel met to assign final grades.

Considerations in assigning the grades included quality of available data (eg, self-report versus objective assessment), representativeness of the information (eg, study sample size, geographic region included, participant sampling), trends over time, and presence of...
disparities across subgroups (e.g., differences between age groups, socioeconomic status (SES), ethnicities, and sex). A hierarchy was applied whereby nationally representative data took precedence when assigning grades; further, objectively-measured data were prioritized in preference to self-reported information. Given existing disparities in health in New Zealand, we considered differences in sex, age, ethnicity, and level of deprivation in our decision-making. Table 1 provides a description of each indicator and guidelines that were used to assign the grade. Since the 2014 New Zealand report card was developed, only a limited number of new national level surveys have been conducted that could inform the indicators. This was discussed with Professor Tremblay of the Global Matrix 2.0 and a decision was made to use the “best available evidence,” which was defined as the most recent nationally representative survey(s), with smaller higher-quality (objectively assessed) research data to inform directionality of the grades. With guidance from the Global Matrix, data to inform the grades for each indicator were limited to the past 8 years and were drawn primarily from the following major sources. For this report card no protocols were used to reduce risk of bias.

Datasets

The New Zealand Health Survey (NZHS) involves face-to-face interviews with more than 13,000 adults and the parents/caregivers of over 4000 children annually. The survey collects a wealth of information on the health and wellbeing of New Zealanders. Every year it includes a core set of questions, which help the Ministry of Health identify key issues and monitor trends on the health and wellbeing of New Zealanders. The 2014–15 NZHS collected data from July 2014 to June 2015. Of those invited to participate in the survey, 79% of adults (13,497 adults) and 83% of parents/caregivers (representing 4754 children) agreed to be interviewed. Results of the report card are presented according to age, sex, ethnic group, and level of deprivation (in New Zealand deprivation scores are used a geographical indicator of socioeconomic status).

A National Survey of Children and Young People’s Physical Activity and Dietary Behaviors in New Zealand was commissioned by Sport and Recreation New Zealand (now Sport New Zealand) and the Ministries of Health, Education, and Youth Development. The survey was conducted to assess PA, sedentary behaviors, and dietary habits of New Zealand children and youth aged 5 to 24 years. For this report card, only data for children aged 5 to 18 years were included. Data were collected through an in-home, face-to-face, self-report personal interview, a follow-up self-report phone interview, and accelerometers. Self-report activity data (via Multimedia Activity Recall for Children and Adolescents; MARCA) were collected from all 2493 participants, while objectively-measured daily activity data (via accelerometry) were collected from 1812 of these participants.

The Young People’s Survey, conducted by Sport New Zealand in 2011, provides information on sport and recreation participation among children and youth aged 5 to 18 years (n = 17,000). Participants were from randomly selected primary (age 5 to 12 years), intermediate (age 11 to 12 years), and secondary (age 13 to 18 years) schools across New Zealand. Information was collected through a self-completed survey for Year 3 to Year 13 students, while parents completed survey forms on behalf of their Year 1 to 2 children. Responses were weighted to provide a representative sample taking into consideration the 2-step selection process and nonresponse. Most findings were presented for 3 age groups: 5- to 10-year-olds, 11- to 14-year-olds, and 15- to 18-year-olds. Survey forms and methods for each age group can be found on the Sport New Zealand website (www.sportnz.org.nz/yps). The survey measured participation levels as well as when, where, and why young people took part in sport and recreation. Time spent participating in sport and recreation while at school, while training with a coach or participating in a competition, and while “mucking around” with friends, family, or alone was also collected. From these data, 3 indicators were calculated: (1) time spent in organized sport (= time in active physical education + time spent at training or practice with a coach or taking part in competition); (2) time spent on sport and recreation while “mucking around” with friends, family, or alone; and (3) overall time spent on sport and recreation (= indicator 1 + indicator 2). Proportions of children spending >3 hours per week in sport and recreation, <3 hours per week in sport and recreation, and no time in sport and recreation were presented for each category. Unpublished findings from the survey were also used to assist with the family and peer influence, school, and community indicators.

Launched in 2009, KiwiSport is a joint Government funding initiative between the Ministry of Education and Sport New Zealand and consists of a “direct fund” administered directly through the Ministry of Education, and a “regional partnership fund,” administered for community use by Regional Sport Trusts (who have funds allocated to them via Sport New Zealand). The aims of KiwiSport are to increase the number of school-aged children participating in organized sport, increase the availability and accessibility of sport opportunities for all school-aged children, and support children to develop skills that allow them to participate actively in sport later in life. Participation levels in Kiwisport initiatives were drawn from the 2009–2013 Regional Partnership Fund Activity Report.

The New Zealand Ministry of Transport survey collects household travel patterns. Data were collected on the modes of transport used for everyday journeys including to work and school. Of the New Zealand households surveyed, the following types of transport to school were used: walking, car passenger/driver, bicycle, public transport, and other. Between 2008 and 2012, data were collected on 3,108 children aged 5 to 17 years in 5 main regions of New Zealand. A representative sample of 4,600 households was included.

The New Zealand Secondary School Sports Council (NZSSSC) is an organization established by schools to promote, organize, and protect secondary school sports. Using a census approach, NZSSSC collects information about the number of students representing their school in sport. The term representing refers to having meaningful participation among children and youth aged 5 to 18 years. For this report card, only data for children aged 5 to 18 years were included.

Table 1: Grades According to Physical Activity Indicator in the 2016 New Zealand Report Card on Physical Activity for Children and Youth

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Grades 2014</th>
<th>Grades 2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall Physical Activity Levels</td>
<td>B</td>
<td>B-</td>
</tr>
<tr>
<td>Organized Sport Participation</td>
<td>B</td>
<td>C+</td>
</tr>
<tr>
<td>Active Play</td>
<td>B</td>
<td>B-</td>
</tr>
<tr>
<td>Active Transportation</td>
<td>C-</td>
<td>C</td>
</tr>
<tr>
<td>Sedentary Behaviors</td>
<td>C</td>
<td>C</td>
</tr>
<tr>
<td>Family and Peers</td>
<td>C</td>
<td>C</td>
</tr>
<tr>
<td>School Environment</td>
<td>B-</td>
<td>C+</td>
</tr>
<tr>
<td>Community and the Built Environment</td>
<td>C</td>
<td>B</td>
</tr>
<tr>
<td>Government Initiatives</td>
<td>INC</td>
<td>B-</td>
</tr>
</tbody>
</table>

Note. The grade for each indicator is based on the percentage of children and youth meeting a defined benchmark: A is 81% to 100%; B is 61% to 80%; C is 41% to 60%; D is 21% to 40%; F is 0% to 20%; INC is Incomplete data.
engagement in sport in their school setting. Meaningful refers to having represented the school in that sport, or took part in a sport provided in-school over a period of 6 weeks or more, or played for a club arranged by the school as the school had no teams in that sport. “Engagements” covers a range of different ways young people can participate. These include representing their school in a specific sport, taking part in an in-school sport opportunity that was at least 6 weeks in duration, playing for a club arranged by the school (because the school had no teams), as well as participating in sport provided through a government initiative. Participation in “one off” in-school events (eg, school athletics, swimming sports, interform/house events) was excluded. The involvement of staff and students in support roles (eg, coach, manager) was also measured. Both number of participations (ie, double counting of participants due to engagement in multiple sports) and individual participant numbers (ie, each participant counted only once) were calculated. Data were analyzed by sex, region and sport code. Trends of participation by individual sport have been examined from 2000 to 2012.

The Youth12 Prevalence Tables14 survey series examined a wide range of health and well-being topics among high-school students in New Zealand. In particular, the percentage of high school students experiencing risk/protective factors (eg, taking drugs, having sex/using contraception) and engagement in health behaviors, and how these proportions have changed over the years. The survey has been conducted 3 times (2001, 2007, and 2012). Results from the most recent third survey (2012), carried out by the Adolescent Health Research Group at the University of Auckland were included. The surveys were conducted in schools and delivered on hand-held Internet tablets to over 8,500 secondary school students.

The State of Play15 survey collected data relating to play perceptions and practices, independent mobility, active transport, and screen time in New Zealand children. The 2015 survey included 2004 parents or caregivers aged 18 years and over, randomly selected from one of New Zealand’s largest research panels. E-mail invitations were sent to a total of 13,400 active panel members (return rate 19%) that were listed as having at least 1 dependent child younger than 18 years. Participants completed a web-based survey using a typical point-and-click interface visually and functionally similar to a paper-based survey. The survey structure consisted of a combination of questions specific to children’s outdoor and active play in New Zealand and several existing scales developed overseas relating to parental tolerance of risk in play and protective behavior in parents.

Results and Discussion

The second New Zealand PA Report Card (Figure 1) brings together available evidence on children and youth PA and sedentary behaviors across 9 key indicators. This reporting approach provides comparison with previous reports (2014), and permits international comparison. Most importantly, this process provides an opportunity to advocate for improvements in PA across the indicators. Grades for each indicator are presented in Table 1.

Overall Physical Activity: B-

This grade was determined primarily from 1 national dataset and supplemented by smaller regional datasets where appropriate. The National Survey of Children and Young People’s Physical Activity and Dietary Behaviors showed that irrespective of the PA measure used (ie, self-report or accelerometer), approximately two-thirds of children and young people (62% of females, 72% of males) complied with the physical activity guidelines and participated in at least 60 minutes of daily moderate-to-vigorous-intensity physical activity (MVPA) on most days of the week. However, this prevalence was heavily weighted toward younger children, with almost 100% of 5- to 9-year-olds meeting PA guidelines. There was a significant age-related decline in proportion of young people meeting guidelines (78% and 32% of 10- to 14-year-olds and 15- to 18-year-olds, respectively). For youth aged 15 to 18 years, girls spent 36 minutes per day and boys spent 55 minutes per day in MVPA. No ethnic disparity existed in this study in terms of PA participation between Māori (Indigenous) and New Zealand Europeans.

Direction of this grade (B-) was informed by supplementary information from a number of regional studies that had employed accelerometry to measure MVPA in children and youth. Data were derived from 8 studies, in total comprising 3363 sociodemographically diverse children and youth from Auckland, Wellington, Christchurch, and Dunedin cities. On average, 54% of children in these studies participated in at least 60 minutes of MVPA per day. Across these regional studies, the prevalence of children meeting this recommendation ranged from 6% to 96%.

Figure 1 — Front cover of the 2016 New Zealand Report Card on Physical Activity for Children and Youth.
Sedentary Behavior: C

This grade was primarily determined using data from 2 national surveys\(^{11,13}\) supplemented with regional data where appropriate. The New Zealand PA guidelines include a recommendation that children and youth should spend less than 2 hours per day watching screens (television, computer, video game, etc.) outside of school hours.\(^{10}\) Grading for this indicator was based on screen time as a marker of sedentary behavior.

The annual NZHS revealed a significant downward trend in children and youth reporting ‘usually watching 2 or more hours of television per day,’ from 53% (ie, 47% met the criteria) in the 2011–12 survey, to 45% (ie, 55% met criteria) in the most recent 2014–15 wave (\(P<.001\)). Age-related increases in screen time were observed; 57% of children aged 5 to 9 years met the recommended screen time guidelines, compared with 54% and 30% of youth aged 10 to 14 years and 15 to 18 years, respectively. Data for 8 regional studies totaling 6329 participants from Auckland, Wellington, Christchurch, and Dunedin cities supplemented the calculation of this score.\(^{15,17–23}\) With the exception of 1 study, all assessed multiple measures of screen time. Across these studies, an average of 49% of children and youth met the recommendation of watching less than 2 hours of screen time daily, with a range of 17% to 96%.

Organized Sport: C+

The grade allocated for the Organized Sport indicator was determined predominantly from 2 surveys.\(^{8,9}\) According to the Sport New Zealand survey,\(^9\) only 56% of school-aged children took part in at least 3 hours of organized sport per week (61% response rate). While guidelines do not exist for organized sport participation in New Zealand, Sport New Zealand’s Strategic Plan for 2015–2020 states a goal of 90% of young people participating in at least 3 hours of organized sport per week, with no less than 60% achieving this goal.\(^{25}\) Further, the 2008–2009 report\(^{8}\) highlighted differences in duration of organized sport participation according to age and sex. Specifically, duration of participation declined with age, from 42 minutes per day in 10- to 14-year-olds to 29 minutes per day in 15- to 19-year-olds, and males spent more time in organized sport participation than females across all age groups except 5 to 9 years.

Active Play: B-

This grade was determined predominantly from 3 surveys.\(^{8,9,15}\) Less than 10% of young people spent no time participating in sport and recreation activities when “mucking around.”\(^9\) Most children (78% of males and 82% of females) reported participating in active games or play at least “once this year.”\(^9\) However, only 28% of children reported climbing trees, 32% often engage in rough-and-tumble games, and 46% often ride bikes, scooters, or other nonmotorized vehicles.\(^{15}\) Only 15% of children often play outside in the rain.\(^{7,15}\) Time spent in active play decreased from 140 minutes per day (for 5- to 9-year-olds) to 87 minutes per day (for 10- to 14-year-olds), followed by 29 minutes per day among 15- to 19-year-olds.\(^8\)

Overall, our findings suggest PA participation was satisfactory for young children but not for youth. The overall grade for PA decreased slightly from the 2014 report card, and reflects the low levels of PA among older children and youth in New Zealand, particularly among adolescent females. It should be noted, however, that a universal PA guideline (60 minutes/day of MVPA most days) is unlikely to correspond to equivalent health outcomes across 5- to 18-year-olds. Future development of evidence-based, age-specific PA guidelines may result in different grades across the age range. Such differences may need to reflect the higher levels of spontaneous activity or free play observed in younger children. Sedentary behavior among all age groups was high, particularly when TV watching or screen-based activities were considered as the main variables of interest. Other sedentary behaviors such as prolonged sitting at school are important but are not included in current guidelines for PA. The grade for active play decreased slightly from 2014 and reflected the inclusion new data indicating low levels of ‘rough and tumble play’ among children.

The grades for sport participation and active play decreased slightly from 2014, which resulted from reanalyzing data for rough and tumble play; the former also considered Sport New Zealand’s achievement goals for sport participation in New Zealand for children and youth, while the latter took into account shortcomings in the quality of active play reported by the recent State of Play survey.

Active Transportation: C-

The Active Transportation grade was informed primarily from the 2014–15 NZHS, which showed that 41% of children aged 5 to 15 years usually used active transport (walk, bike, skate, or similar) to school.\(^7\) For older children, The Youth 2012 survey showed that only 33% of secondary school students used active transport to or from school 6 out of 7 times in the previous week.\(^{15}\) Younger children (5–9 years) were less likely to use active transportation (38%) compared with older children (9–14 years; 43%). Those who lived in more deprived areas were more likely to actively commute (46%) compared with those from least deprived regions (36%).\(^7\) The grade for active transportation remained unchanged from 2014 and was driven primarily by higher levels of active transport among older children aged 10 years or more.

Family and Peer Support: C

This grade was based on 2 surveys,\(^{10,14}\) with no new data available since 2014. In younger children aged 5 to 8 years, most parents and caregivers of boys (70%) and girls (62%) said they encouraged their child to do sport or active things almost daily or more often.\(^{10}\) Corresponding values in children aged 10 to 15 years were somewhat lower (47% of boys and 50% of girls).\(^{16}\) Some age-related differences in the number of parents who were physically active with their child almost daily or more often during a normal week were also apparent. Parents and caregivers indicated that this was the case in 39% of boys and 36% for girls.\(^{10}\) In the 10- to 15-year-old age group, 19% of boys and 18% of girls reported that a parent or caregiver was physically active with them almost daily or more often during a normal week. In terms of peer support to be physically active, 70% of children who reported receiving high peer support and encouragement were active, compared with 49% of children who reported receiving low peer support and encouragement.\(^{14}\) 51% of boys and 40% of girls aged 10 to 15 years reported doing sport or active things with their friends almost daily.\(^{16}\)

School Environment: C+

The School Environment indicator reflects a composite of sub-grades for physical education (PE) (B), school sport (C), and play environment (C). Grading was derived predominantly from 5 surveys.\(^{9,10,13,14,25}\) Almost two-thirds (65%) of secondary school students reported attending PE class in the last 7 days (95% for youth aged 13 years; 26% for youth aged >17 years).\(^{14}\) PE was rated
the favorite school subject for Year 8 students. Over half of high school students had meaningful engagement in school sports (ie, not a one-off activity), with higher rates among males (56%) than females (49%). The majority (86%) of males and females aged 10 to 14 years reported taking part in 1 or more sport and recreation activity organized by their school ‘this year.’ Half (51%) of males and females aged 5 to 18 years participated in a school sports team ‘this year.’ Approximately 40% of New Zealand schools do not allow children to play with repurposed loose parts (eg, tires, nets, pieces of timber), climb trees, or use scooters/bikes during recess/lunch breaks. Over half of schools do not allow contact games (eg, rugby) during recess/lunch breaks. Over half of New Zealand parents believe there are too many unnecessary safety rules in New Zealand schools.

Community and the Built Environment: B

Most children and youth reported having access to a bicycle (5- to 12-year-olds: 91%; 10- to 15-year-olds: 78%), other sports equipment at home (10- to 15-year-olds: 88%), and sport/recreational facilities in their neighborhood (5- to 12-year-olds: 76.0% boys and 78.9% girls; 10- to 15-year-olds: 71.4% to 88.4%), with lower availability of these resources in children attending low decile (high deprivation) schools. Most youth (13-18 years of age) could walk to a park (71.3%), one half lived within walking distance to a sport field (48.7%), whereas 25%–33% could walk to a basketball court or hoop, swimming pool, gym, or bike track. Approximately 10% of youth expressed concerns related to traffic and personal safety and lack of pedestrian and cycling infrastructure in their neighborhoods. Lower access to some neighborhood recreation facilities, less pedestrian and cycling infrastructure and greater concerns for traffic and pedestrian safety were more frequently reported by youth living in low deprivation and rural areas compared with their counterparts. More than half (58%) of youth participated in a sports team or club outside of school with a lower proportion of girls (56%) and those living in high deprivation (50%) and urban areas (57%) compared with their low deprivation (66%) and rural (67%) counterparts.

The built and school environments grades indicate reasonable availability of PA equipment and opportunities (such as sport equipment, owning a bicycle), but does not necessarily reflect high usage. In addition, many children and youth in New Zealand participate in some form of physical education at school, which may reflect that physical education is mandatory in schools up until the age 15 years. Due to lack of national-level, representative data, this grade does not provide an assessment of the built environment in terms of walkability or accessibility to key PA destinations.

Government Initiatives: B-

The Government Initiatives indicator was the hardest to grade due to lack of agreed international criteria for assessment. On the basis of the following evidence, Government Initiatives was graded B-. In 2015 the New Zealand government launched the Childhood Obesity Plan, a systems-based model for community change, focused on nutrition, the environment and physical activity. A total of NZ$40 million over 4 years was committed to implement initiatives in 10 targeted communities across New Zealand through the Healthy Families New Zealand prevention platform. In dependent of the Obesity Action Plan there are many activities underway regionally, and actions in other sectors such as transport, sport and recreation, and workplaces. Examples include but are not limited to ActiveSmart (encourages Kiwis of all ages and fitness levels to be more active); Good Practice Principles for the Provision of Sport and Recreation for Young People (Sport New Zealand); Guidelines for Sustainable Physical Activity in School Communities, and, Sport in Education (Ministry of Education); BikeWise (NZ Transport Agency).

The 2016 Report Card included the first grade for government initiatives. While this grade was driven primarily by the launch of the 2015 Childhood Obesity Plan, other national and regional initiatives were also evident. For example, at a regional and local level there are subsidized children’s activities (eg, lower cost swimming pool entry, events and community programs) and many PA initiatives (eg, SportStart). In sum, since the 2014 Report Card, an increase in evidence of government investment and regional and local initiatives to promote PA, sport and recreation has occurred. However, there remains no national-level framework for promoting PA, or clear evaluation strategies.

Limitations

The main limitation of this 2016 New Zealand report card was the lack of new nationally representative data, which meant that some scores were unchanged from the 2014 Report Card. Apart from the NZHS, which only captures active transportation, there is no ongoing PA/sedentary behavior surveillance in New Zealand, particularly with objective methods (eg, accelerometers). Thus, many of the grades assigned were based on data collected 8 years ago, which may or may not reflect current PA levels. While the expert panel did review local or regional level data to inform directionality of the assigned grades, these data are limited and ongoing national surveillance is needed.

Implications

The final report card will be distributed for wider consultation, which may reveal additional data to be included in the future, which may also include additional indicators to better reflect the New Zealand situation.

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References