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Irish Para Report Card on Physical Activity of Children and Adolescents With Disabilities

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For the first time, data on children and adolescents with disabilities in Ireland are reported based on the Active Healthy Kids Global Alliance Para Report Card methodology. The most recent data from the last 10 years were used in the grading process (A+ to F), and indicators with insufficient data were graded as incomplete. Of the 10 indicators from the Global Matrix Para Report Cards, grades were assigned to Overall Physical Activity (F), Organized Sport (D), Active Transport (D–), Sedentary Behaviors (D–), Family & Peers (C), School (C–), Community & Environment (B–), and Government (B). Irish disability sport organizations were invited to assess the research-led audit and provided commentary around the final grading. The contextual discussion of the grades is presented through the lens of strengths, weaknesses, opportunities, and threats with the purpose being to provide direction for the reduction of physical activity disparities among children with disabilities.

Keywords: youth, special education, policy, inclusion, disability

In 2014, the first Physical Activity Report Card (RC) from Ireland (the Republic of Ireland and Northern Ireland) was published as part of a Physical Activity Global Matrix. It serves as an advocacy tool for influencing physical activity (PA) policy and programming based on aggregating the best available data and translates results to grades for several key indicators at the individual,


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interindividual, and macrolevels (Harrington et al., 2014). The exercise was repeated in 2016, whereby Harrington et al. (2016) noted minimal disability-specific data were available and called for addressing the data gap in Ireland. The 2022 Report Card is the third iteration in Ireland, as part of the Global Matrix 4.0 on PA Report Cards (Aubert et al., 2022), with data disaggregated by disability.

Between 2016 and 2019, 5%–6% of students across Ireland have an official status of having special education needs (Ramberg et al., 2020). This might be an underestimate of children and adolescents with disabilities as special education status may not apply to all children and adolescents with disabilities. The Ireland's National Physical Activity Plan (Healthy Ireland, 2016) and the Sport and Physical Activity Strategy for Northern Ireland (Department for Communities, 2022) emphasize the importance of PA for people with and without disabilities. However, people with disabilities in Ireland, including children and adolescents, are reported to be at a higher risk of physical inactivity (CARA, 2020). Therefore, this paper aims to report the results of PA Para Report Cards for the 10 Global Matrix indicators for Irish children and adolescents with disabilities and outline some implications from these findings.

Methods

Published studies and reports from 2010 with data, disaggregated by disabilities, on the Para Report Card indicators (Overall Physical Activity, Organized Sport, Active Play, Active Transport, Physical Fitness, Sedentary Behaviors, School, Family & Peers, Community & Environment, and Government) were reviewed. Only the latest data were used from repeated studies. Where studies had variables aligned with the indicator benchmarks and were not published, data requests were made through the study providers. National studies with disability data included were Growing up in Ireland (GUI) infant cohort (Wave 5) and child cohort (Wave 3), Children's Sport Participation and Physical Activity (CSPPA), Health Behavior in School-aged Children (HBSC), Irish Sports Monitor (ISM), and the Young Persons' Behaviour and Attitude Survey (YPBAS). The most recent data were used in the grading process, and indicators with insufficient data were graded as incomplete. Prevalence for each indicator was converted into a grade using the standardized cutoffs as in earlier report cards (Aubert et al., 2018) with some additional disability-specific indicators presented in the overview paper of this issue (Ng et al., Review). For the Government indicator, the Health-Enhancing Physical Activity Policy Audit Tool was used (Ward et al., 2020).

In the case where indicators had several benchmarks such as the Family & Peers indicator, the weighted average of the data was calculated prior to converting to a grade. The researchers discussed the final grades prior to consultation with national disability sport organizations. The representatives and their organizations requested to remain anonymous. Online one-to-one meetings took place to discuss the strengths, weaknesses, opportunities, and threats to their organization with a view on the broader policy development process (Helms & Nixon, 2010) based on the grades for the indicator. Each session lasted approximately 2 hr, and notes were shared between representatives and the research team. As part of the Global Matrix of Para Report Cards, the grades were submitted for external audit (Ng et al., Review). These independent auditors were selected to review the grades based on their knowledge of the Global Matrix protocol. Following this process, the grades were approved for reporting purposes.

Results

Five national surveys included measures for disability, and no disability-specific survey with PA was found. Measures in the study ranged from the Washington Group on Disability Statistics (Cappa et al., 2018), to single-item measures. The disability prevalence estimates from the study ranged from 4.0% in GUI Wave 5 to 18.7% in YPBAS. More details of the disability prevalence can be found from the national report (Carlin et al., 2022). Rationale and evidence for the grades are in [Supplementary Table S1](#) (available online). The spread of the data for each graded indicator is presented in [Figure 1](#). From data and studies gathered across Ireland, grades were assigned for eight of the 10 indicators. Two indicators (Active Play and Physical Fitness) were graded as incomplete due to a lack of data on the benchmarks. The lowest performing indicator was Overall Physical Activity (F). The highest grade was in the Government (B) indicator ([Table 1](#)). Discussions with national disability sport organizations were divided into the different Strengths, Weaknesses, Opportunities, and Threats sections that follow.

Strengths

There were adequate data from national surveys to assign grades for eight of the 10 indicators for children and adolescents with disabilities. The highest grade was in the Government indicator (grade = B), with examples of specific policy documents on physical activity by the Northern Ireland Assembly (McCallion, 2021) and just under one million EUR for Sport Inclusion Disability Officers across all 29 local sport partnerships in the Republic of Ireland (CARA, 2020).

The Community & Environment indicator was graded B–. Between 55% and 95% of children and adolescents with disabilities perceived their neighborhood as safe and appropriate for PA participation. Stakeholders raised current agendas to increase provisions for accessible playgrounds around Ireland, although data were lacking at the time of grading. Specifically, the first Diversity Park was opened in Portstewart, Northern Ireland, with accessible play equipment as well as a fully equipped spacious toilet area with changing facilities (Fields in Trust, 2022). Building up the task force to increase inclusivity of PA opportunities is another area that shows great promise. For example, CARA, a national body has delivered over 200 short courses in 12 months, each with between 15 and 20 people in attendance (CARA, 2020).

The Family & Peers indicator (grade C) was mainly based on 53%–65% of children, and adolescents with disabilities reported PA participation with family or peers. The stakeholders agreed that the majority of children and adolescents with disabilities have supportive families and peers who are able to coengage in PA in the community. Specific opportunities with and without family members have arisen due to the employment of sport inclusion disability officers in local sport partnerships (CARA, 2020). This compares favorably with the Family & Peers indicator in the overall national PA Report Card (children and adolescents without disabilities) was graded D+ (Carlin et al., 2022).

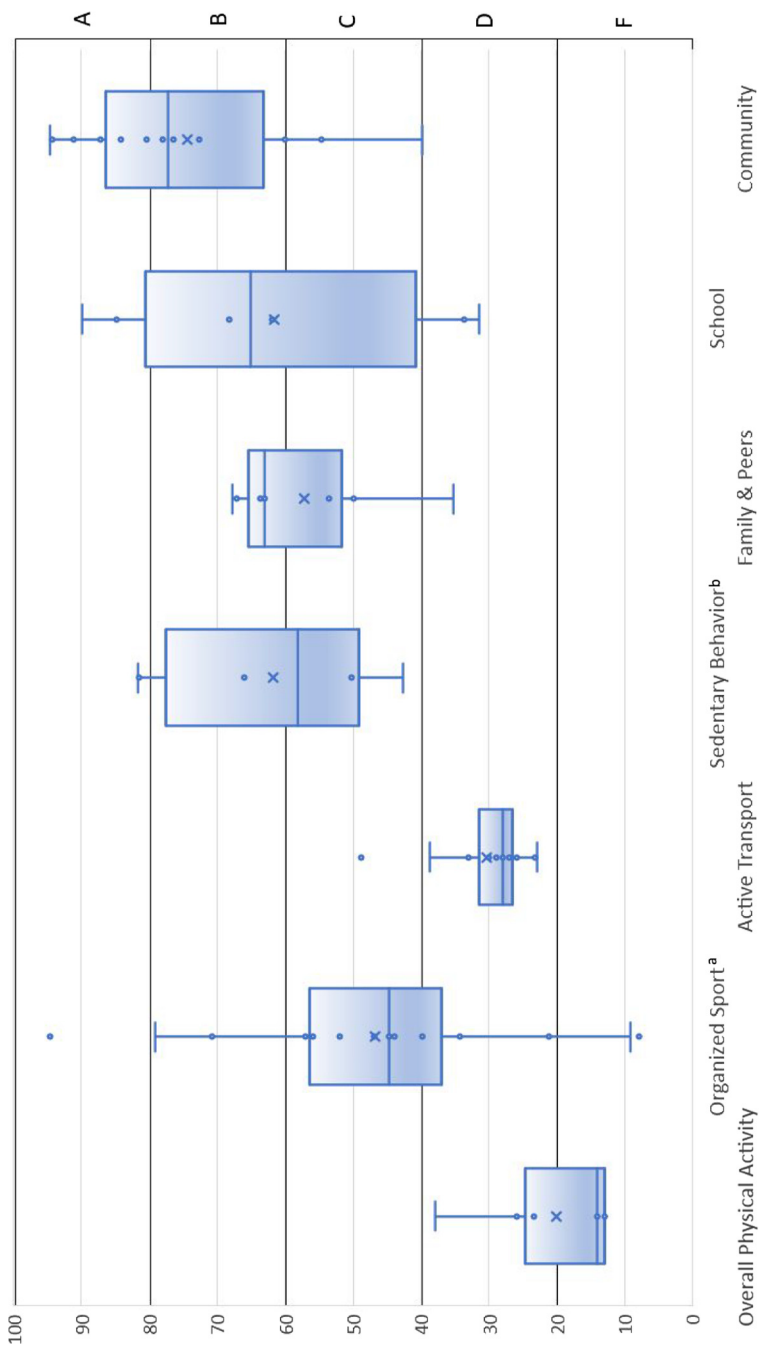


Figure 1 — Box-and-whisker plot of the Irish data points for each Para Report Card indicator. *Note.* Left axis = data percentages; right axis = alignment with grades; dot = data point; horizontal line = median; x = unweighted mean. ^aOrganized Sport was downgraded as Children's Sport Participation and Physical Activity had a larger sample, with lower averages. ^bSedentary Behaviors benchmark was solely on screen time.

Table 1 Physical Activity Indicators, Data for Benchmarks, Grades, and Sources of Information for Northern Ireland, Republic of Ireland, and All Island

Indicator	Grade	Data source		
		Northern Ireland	Republic of Ireland	All Island
Overall Physical Activity	F		GUI3, GUI5, HBSC	CSPPA
Organized Sport	D	YPBAS	GUI3, GUI5, ISM	CSPPA
Active Play	INC			
Active Transport	D–		HBSC, GUI5	CSPPA
Sedentary Behaviors	D–		GUI5	CSPPA
Physical Fitness	INC			
Family & Peers	C		GUI5	CSPPA
School	C–		GUI3, GUI5	CSPPA
Community & Environment	B–		GUI3, GUI5	CSPPA
Government	B			HEPA

Note. CSPPA = Children's Sport Participation and Physical Activity 2018 (10–18 years); GUI3 = Growing Up in Ireland Child Cohort 3 (17/18 years); GUI5 = Growing Up in Ireland Infant Cohort 5 (9 years); HBSC = Health Behavior in School-Age Children 2018 (10–18 years); ISM = Irish Sports Monitor 201x (16–18 years); YPBAS = Young Persons' Behaviour and Attitude Survey 2019–2020 (11–16 years); HEPA = Health Enhancing Physical Activity Policy Evaluation Tool v2.

Weaknesses

There were not enough data on active play or physical fitness among children and adolescents with disabilities. Despite recent plans to build accessible playgrounds, data on its usage are lacking in both outdoor and indoor settings. There was one study on 92 children on the autism spectrum that used a modified test battery of stork balance test, standing broad jump, sit and reach, grip strength, and the 20-m shuttle run (Coffey et al., 2021). After the results were compared against the norms for the general children population, the grade would be F. No other recent studies were found relating to this benchmark, and it could be due to differences in administering physical fitness tests among children and adolescents with disabilities (Király et al., 2019), making it difficult to make comparisons that are used in this Para Report Card.

The lowest grade was in Overall Physical Activity (grade = F) from the four data sources (CSPPA, HBSC, GUI3, and GUI5), consultation with stakeholders, and confirmation from the audit process. When compared to the national report card, Overall Physical Activity has improved from grade D– in 2014 to grade of C– in 2022 (Carlin et al., 2022), yet for children and adolescents with disabilities, the grade was F, highlighting an average difference in excess of 20% in overall PA levels between population groups (without and with disabilities). Multisectoral approaches are needed to address this matter urgently, as even systems approaches have not outlined the connections specific to improving PA among children and adolescents with disabilities

(Rutter et al., 2019). For some children and adolescents with disabilities, individuals may perceive time spent at therapeutic sessions as part of their overall PA. Stakeholders reported the lack of understanding of the settings where PA takes place is a weakness in the interpretation of the results. Furthermore, data collected were from self or proxy report surveys and device-based measures may give more indication of the intensity of movement. Yet, accurate device calibration for children and adolescents with disabilities is lacking, and improvements on the description of PA in the surveys are needed.

Opportunities

The main opportunities arise from the availability of data for the indicators. Building on this current knowledge, it is possible to make regular assessments over time to assess trends within eight of the 10 indicators. More work is needed to collect data on the Active Play and Physical Fitness indicators for children and adolescents with disabilities in Ireland.

The School (grade = C-) is a critical environment that can promote PA. Based on two data sources, between 62% and 68% of children and adolescents with disabilities reported that their school had adequate sports facilities. In the Republic of Ireland, the Active School Flag is a whole-of-school program funded by the Department of Education, and recently, additional training has been given to teachers in schools with students with special needs. Stakeholders reported the need for less competitive and more inclusive extracurricular activities. Furthermore, one of the most popular resource requests to CARA is for materials on how to adapt physical education lessons.

There was a grade D assigned for active transportation, and it was based on three data sources, where between 26% and 41% of children and adolescents with disabilities walked or cycled to school. These figures seemed rather high to the stakeholders, who suggested that many children and adolescents with disabilities rely upon transportation services to get to and from school. More data are needed to understand how the public infrastructure can promote active transportation among children and adolescents with disabilities, including consideration of accessible bike paths and storage facilities.

Threats

A wide range of children and adolescents with disabilities (44%–87%) spent more than 2 hr per day watching TV programs or DVDs (grade C-). Sedentary behavior includes more behaviors than viewing in front of screens, and the grade was perceived as overly optimistic for children and adolescents with disabilities. The stakeholders highlighted challenges for active teaching practices in schools. Some children and adolescents with disabilities rely on assistive devices or support to engage in active breaks or classes, thus could leave more children and adolescents with disabilities with the perception they spend more sedentary time than their peers without disabilities.

Although the vast majority of children and adolescents with disabilities attend general schools at the postprimary level (Ramberg et al., 2020), it is unclear whether children and adolescents with disabilities were excluded from some

school-based national data collection efforts. This may lead to samples that are unrepresented and is a major barrier to understanding PA behaviors of children and adolescents with disabilities; hence, interpretation of the results needs to be treated with caution.

Discussions

This is the first-time data on Irish children and adolescents with disabilities have been pooled together and translated into grades according to the Global Matrix PA Report Card methodology. There were sufficient data to produce grades for eight of the 10 indicators from national surveys that included children and adolescents with and without disabilities. Disability and PA-specific relevant modules in surveys seem to be lacking to harness the weaknesses and threats identified in this paper.

This leaves a knowledge gap between disability policy and PA policy as there were either no timely disability-specific studies with measures on PA or studies did not match the Para Report Card benchmarks. Even though the 2016–2020 National PA plan strived for 1% per annum increase in the proportion of children meeting PA recommendations ([Healthy Ireland, 2016](#)), the grades in this report were lower than the general report, suggesting children and adolescents with disabilities are being left behind from policy efforts.

Across the five national surveys, there were different sampling techniques, data-collection procedures, and disability measures, leading to different disability prevalence estimates, which could be seen as a study limitation as there were difficulties to compare findings across data sources. As a result of the Global Matrix methodology, the spread of data across the benchmarks forced an average grade rather than recognizing how wide the results were. Further studies, outside the scope of the Global Matrix, are needed to understand the possible confounders that lead to the wide spread of results, particularly in the Organized Sport, Sedentary Behaviors, School, and Community & Environment indicators. Caution should be used when interpreting grades from the island of Ireland because not all the indicators had disability-specific data from both Northern Ireland and the Republic of Ireland. Furthermore, some disability data from the GUI were not used as they have not been published or could not be accessed. More robust data can be obtained from longitudinal studies with other impairment groups.

Future Directions

This Para Report Card is the first positive step toward a goal of disaggregating statistics by disabilities and reporting them in a way that is comparable to the general National Report Card. In recognition of this, there are still many areas in which we can work to improve physical activity promotion of children and adolescents with disabilities. These include, but are not limited to, ensuring that all indicators can be measured through inclusive national surveys, prioritizing data collection on active play and physical fitness, considering the suitability of indicators for children and adolescents with disabilities such as accessibility indexes, continuing and increasing state funding to support physical activity programs, creating initiatives that target the reduction in the PA disparities, and

advocating throughout multisectoral levels to promote more PA among children and adolescents with disabilities.

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References

- Aubert, S., Barnes, J.D., Abdeta, C., Abi Nader, P., Adeniyi, A.F., Aguilar-Farias, N., Andrade Tenesaca, D.S., Bhawra, J., Brazo-Sayavera, J., Cardon, G., Chang, C., Delisle Nyström, C., Demetriou, Y., Draper, C.E., Edwards, L., Emeljanovas, A., Gába, A., Galaviz, K.I., González, S.A., . . . Tremblay, M.S. (2018). Global Matrix 3.0 Physical Activity Report Card grades for children and youth: Results and analysis from 49 countries. *Journal of Physical Activity and Health, 15*(Suppl. 2), S251–S273. <https://doi.org/10.1123/jpah.2018-0472>
- Aubert, S., Barnes, J.D., Demchenko, I., Hawthorne, M., Abdeta, C., Abi Nader, P., Adsuar Sala, J.C., Aguilar-Farias, N., Aznar, S., Bakalár, P., Bhawra, J., Brazo-Sayavera, J., Bringas, M., Cagas, J.Y., Carlin, A., Chang, C.-K., Chen, B., Christiansen, L.B., Christie, C.J.-A., . . . Tremblay, M.S. (2022). Global Matrix 4.0 Physical Activity Report Card grades for children and adolescents: Results and analyses from 57 countries. *Journal of Physical Activity and Health, 19*(11), 700–728. <https://doi.org/10.1123/jpah.2022-0456>
- Cappa, C., Mont, D., Loeb, M., Misunas, C., Madans, J., Comic, T., & Castro, F. (2018). The development and testing of a module on child functioning for identifying children with disabilities on surveys. III: Field testing. *Disability and Health Journal, 11*(4), 510–518. <https://doi.org/10.1016/j.dhjo.2018.06.004>
- CARA. (2020). *Cara annual report*. Cara Sport Inclusion Ireland.
- Carlin, A., Belton, S., Connolly, S., Coppinger, T., Cunningham, C., Donnelly, A., Dowd, K., Harrington, D., Murtagh, E., Ng, K.W., O'Brien, W., Redpath, T., Woods, C., Connolly, S., & Murphy, M. (2022). *The 2022 Ireland north and south report card on physical activity for children and adolescents*. Institute of Public Health in Ireland.
- Coffey, C., Sheehan, D., Faigenbaum, A.D., Healy, S., Lloyd, R.S., & Kinsella, S. (2021). Comparison of fitness levels between elementary school children with autism spectrum disorder and age-matched neurotypically developing children. *Autism Research, 14*(9), 2038–2046. <https://doi.org/10.1002/aur.2559>
- Department for Communities. (2022). *Active living: more people, more active, more of the time*. The sport and physical activity strategy for Northern Ireland.
- Fields in Trust. (2022). Universality of parks: Diversity park—A playground for children of all abilities. <https://www.fieldsintrust.org/News/diversity-park-a-playground-for-children-of-all-abilities>
- Harrington, D.M., Belton, S., Coppinger, T., Cullen, M., Donnelly, A., Dowd, K., Keating, T., Layte, R., Murphy, M., Murphy, N., Murtagh, E., & Woods, C. (2014). Results from Ireland's 2014 report card on physical activity in children and youth. *Journal of Physical Activity and Health, 11*, S63–S68. <https://doi.org/10.1123/jpah.2014-0166>

- Harrington, D.M., Murphy, M., Carlin, A., Coppinger, T., Donnelly, A., Dowd, K.P., Woods, C.B., O'Brien, W., & Belton, S. (2016). Results from Ireland North and South's 2016 report card on physical activity for children and youth. *Journal of Physical Activity and Health, 13*(11), S183–S188. <https://doi.org/10.1123/jpah.2016-0334>
- Healthy Ireland. (2016). *Get Ireland active! The national physical activity plan for Ireland*. Department of Health.
- Helms, M.M., & Nixon, J. (2010). Exploring SWOT analysis—Where are we now? *Journal of Strategy and Management, 3*(3), 215–251. <https://doi.org/10.1108/17554251011064837>
- Király, A., Kaj, M., Kälbli, K., & Csányi, T. (2019). Overview of the adaptation process of the Hungarian National Student Fitness Test to students with special educational needs. *Palaestra, 33*(1), 20–27.
- McCallion, K. (2021). Sport and disability in Northern Ireland. <http://www.niassembly.gov.uk/globalassets/documents/raise/publications/2017-2022/2021/communities/2721.pdf>
- Ng, K.W., Sit, C.H.-P., Arbour-Nicitopoulos, K., Aubert, S., Stanish, H., Hutzler, Y., Augusto Santos Silva, D., Kang, M.-G., López-Gil, J.F., Lee, E.-Y., Asunta, P., Pozeriene, J., Urbański, P.K., Aguilar-Farias, N., Wilson, O.W.A., & Reilly, J.J. A global matrix of para report cards on physical activity of children and adolescents with disabilities [Manuscript submitted for publication].
- Ramberg, J., Lénárt, A., & Watkins, A. (2020). *EASIE 2018 dataset cross-country report*. European Agency for Special Needs and Inclusive Education.
- Rutter, H., Cavill, N., Bauman, A., & Bull, F. (2019). Systems approaches to global and national physical activity plans. *Bulletin of the World Health Organization, 97*(2), 162–165. <https://doi.org/10.2471/BLT.18.220533>
- Ward, M., Tyler, R., Edwards, L., Miller, M., Williams, S., & Stratton, G. (2020). The AHK-wales report card 2018: Policy measures—Is it possible to 'score' qualitative data? *Health Promotion International, 36*(4), 1151–1159. <https://doi.org/10.1093/heapro/daaa118>