



Webinar

# Global Matrix 5.0: Publication plan and updated indicators



Prof Mark Tremblay



Dr Salomé Aubert



March 26, 2025



Online - Zoom



# Agenda

---

- Publication plan
- Writing process and authorship strategies
- Review each indicator's old and new definition and benchmark
- Q&A



# Publication Plan



# Publication Plan

---

## AHKGA Commitments

- Partnership with JPAH
- One paper reporting global findings on children and adolescents with disabilities in APAQ Journal
- AHKGA Fellow (Iryna) to lead the “main Global Matrix paper” that will be submitted to JPAH

## Objectives

- **Designing an ambitious, impactful, and innovative/novel publication plan, but also (and above all) feasible within our timeline.**
- **Designing writing process and authorship strategies to ensure fairness, feasibility, respect of co-authorship guidelines, and successful completion of the Global Matrix 5.0 publication plan.**

# Publication Plan

---

## AHKGA Publication Committee proposal for the Global Matrix 5.0

- **Main paper (led by AHKGA fellow – Iryna)** presenting overall global findings, general analysis/findings by world region, HDI, level of income, etc, and digging deeper in the Overall Physical Activity indicator – submitted in JPAH.
- One **global disability paper** submitted in APAQ journal
- **9 other global papers** – one for each Global Matrix remaining indicators
  - **Consistent content across papers** (e.g., overall findings and exploring surveillance & standardisation challenges, equities and inequities – at multiple levels country, region, gender, disability, research gaps, priorities and recommendation)
  - **Additional analysis**, links, discussions that would be relevant for each specific indicator

# Publication Plan

---

## **Example 1: Organized Sport and Physical Activity**

- Cultural practices: Regional and cultural variations in organized sports, including traditional sports and their preservation in modern contexts.
- Sport for peace: The role of organized sport in conflict resolution, fostering social inclusion, and promoting mental well-being in post-conflict or fragile settings.
- Impact of major sporting events: Influence of global/regional sporting events (Olympics, Youth Games) on youth physical activity, link between country Olympic medal counts and grades

# Publication Plan

---

## **Example 2: Community and Environment Activity paper potential additional analysis**

- Link with climate change impacts
- Link with access to nature: The role of green spaces and outdoor environments in promoting PA and the disparities in access between urban and rural areas.
- Community-level interventions: Examples of successful community programs and urban design initiatives that foster active living (e.g., outdoor gyms, walking groups).
- Urban vs. Rural Settings

# Publication Plan

---

## **Impactful standardized title for each paper**

- “*Global state of physical activity in children and adolescents, insights from the Global Matrix 5.0*” & “*Global state of physical activity in children and adolescents with disabilities, insights from the Global Matrix 5.0*”
- “*Global state of organized sport and physical activity in children and adolescents/ sedentary behaviour/ active play/ physical fitness in children and adolescents, insights from the Global Matrix 5.0*”
- “*Global state of school physical activity promoting characteristics in children and adolescents, insights from the Global Matrix 5.0*”
- “*Global state of environment and community physical activity promoting characteristics in children and adolescents, insights from the Global Matrix 5.0*”
- “*Global state of family and peers' physical activity promoting characteristics in children and adolescents, insights from the Global Matrix 5.0*”
- “*Global state of government & policy physical activity promoting characteristics in children and adolescents, insights from the Global Matrix 5.0*”

# Writing process and authorship strategies



# Writing process and authorship strategies

---

- Previous GM approaches: a single main Global Matrix paper involved all Report Card (RC) leaders/co-leaders as co-authors.
- Many RC leaders had limited involvement in contributing or reviewing the manuscript, leading to imbalances in workload distribution and reduced accountability.
- Important to ensure that all contributors play a more active and equitable role in the writing process to upholds the integrity of co-authorship and ensure that the insights and expertise from different regions and contexts are fully integrated into each paper.

# Writing process and authorship strategies

---

## Steering/Working Groups for Each Paper

- **Formation of Working Groups:** For each paper, we will form a dedicated working group that includes both Report Card (RC) leaders/co-leaders and potentially other relevant experts (within the RC teams). These groups will be responsible for contributing to both the content and development of the paper.
- **Responsibilities of Working Groups:** Each group will oversee key aspects of paper development, including data interpretation, writing specific sections, and providing feedback during revisions. This will create shared ownership and reduce the burden on the lead author.
- **Roles** within the working group should be clearly defined from the start. Steering group will assign specific sections of the paper (e.g., introduction, methods, results, discussion) to different group members based on expertise and interest. Regular virtual meetings (e.g., monthly) should be held to check on progress, resolve any challenges, and ensure ongoing collaboration.

# Writing process and authorship strategies

---

## Steering/Working Groups for Each Paper

- **Allocating Co-authorship Based on Expertise:** To distribute RC leaders/co-leaders more evenly across papers, we should assign them to specific indicators where they have expertise or a particular interest (consultation process/survey)
- **Regional and Global Representation:** We will aim that each working group is diverse, includes representatives from different world regions to maintain the global scope and integrity of the Global Matrix.
- **Lead Author as Coordinator:** The lead author of each paper will also act as a coordinator, ensuring that the group's input is integrated, and the timeline is respected. They will oversee the writing process but not bear the full responsibility for drafting the paper.
- **Capacity building:** Lead writing priority could be given to PhD candidates who are currently working on relevant topics related to the specific paper. Experienced writer included who could serve as “back-up” writers.
- **Maximum number of papers co-authored per person?** Potential solution: up to three co-authors (each on a different paper) per Report Card team.

Each paper will have to include a standardized statement in the acknowledgement section to thanks the contribution of all the Report Card teams

# Writing process and authorship strategies

---

## Transparent and Structured Co-authorship Guidelines

Criteria for Co-authorship: Co-authorship will be granted based on well-defined contributions. The International Committee of Medical Journal Editors (ICMJE) guidelines will be followed as a baseline, requiring substantial contributions in one or more areas such as:

- Data acquisition or analysis (hence, being a Report Card team leader/member)
- Drafting and revising the manuscript
- Interpretation of results
- Final approval of the manuscript before submission
- Agreement to be accountable for all aspects of the work

**Minimum contribution threshold for co-authorship:** those not meeting this threshold will be removed from the author list and added in the acknowledgments section rather than receiving co-authorship

# Writing process and authorship strategies

---

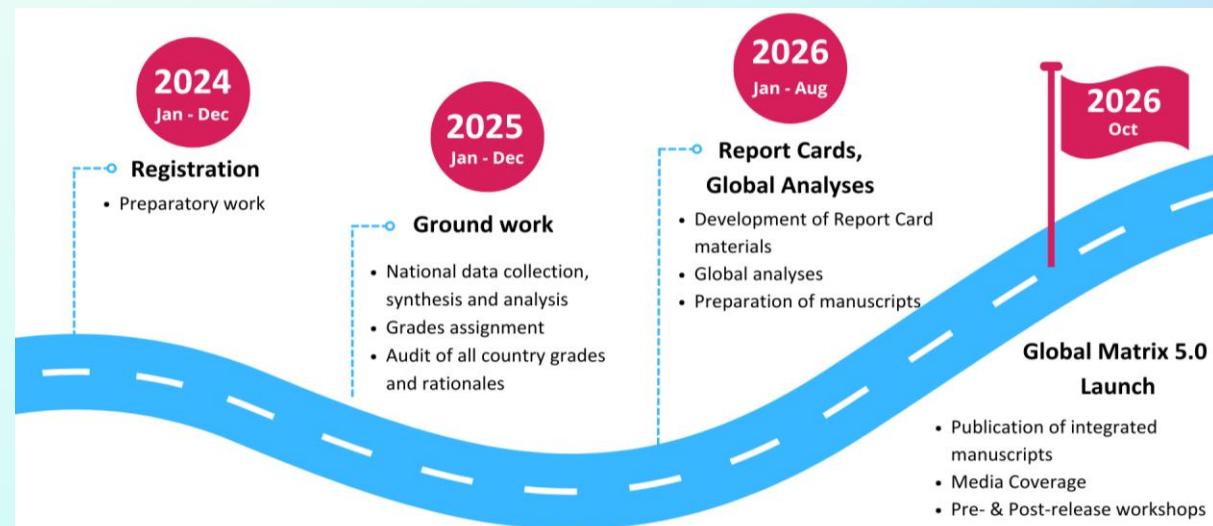
## Writing process and timeline

- 1. Formation of steering/working groups for each paper – [starting now!](#)**
- 2. Identification of lead author/coordinator – May/June 2025**
- 3. Design and approval of harmonized content across all papers – June-September 2025**
- 4. Development and approval of each full paper outline and content – June-October 2025**
  - Detailed outline including specific analyses, links, and discussion points, and unique aspects of the paper
- 5. Survey design and distribution – Submission of questions by November 2025 (survey circulated in December/January to Report Card teams with audited & approved grades)**
  - Surveys will be designed to gather additional data from Report Card leaders including questions specific to individual papers – each working group will have to provide on time specific questions necessary for their paper (e.g., in the Global Matrix 4.0, additional survey questions were designed to gather Report Card leaders top priorities to improve the grades for each indicators, as well as their perception of the impact of war/conflicts, economic crisis, climate change, and COVID19 on indicators).

# Writing process and authorship strategies

## Writing process and timeline

6. Distribution of GM5.0 grades and rationales to writing groups - December 2025/January 2026
7. Global analysis by Iryna and distribution of relevant results for each paper; additional analyses (e.g., survey results) performed by working groups – January - early February 2026
8. Clear writing step deadlines and monitoring of writing progress
9. Submission of final papers – GOAL: March 2026



# Writing process and authorship strategies

---

## Time management and internal review process

- Respect of the writing process timeline will be kept track (probably by the AHKGA publication committee chair – Salomé) corresponding with the lead author/coordinator of each paper to control for the need of an “intervention”.
- The publication committee will review the proposed outlines in Step 4: “Development and approval of each full paper outline and content” to prevent overlap between manuscripts and suggest potential additional analysis or discussion points.

# Writing process and authorship strategies

---

## How to contribute?

All the Report Card team leaders will be invited to contribute to the main Global Matrix/Overall Physical Activity 5.0 paper.

If you are interested in writing and co-authoring one of the 10 additional papers (9 remaining indicator papers, and the global disability paper), please fill out the **Expression of Interest Form** and send it to [salome\\_aubert@hotmail.fr](mailto:salome_aubert@hotmail.fr) & [estone@cheo.on.ca](mailto:estone@cheo.on.ca) by May 31<sup>st</sup>, 2025!

## Who can contribute?

Up to 3 Report Card team members can submit an expression of interest to contribute to one of the 10 additional papers. Additional AHGKA or external experts will be invited to contribute to fill potential authorship gap if needed.

# Updated Indicator Definitions and Benchmarks



# Overall Physical Activity

## Definition

Old	New	CAWD
Daily total of bodily movements produced by skeletal muscles that requires energy expenditure.	<b>Daily bodily movements</b> produced by skeletal muscles that requires energy expenditure.	Same definition for children and adolescents with disabilities or chronic conditions.

# Overall Physical Activity

## Benchmark

No changes	CAWD
<p>% of children and adolescents who meet the Global Recommendations on Physical Activity for Health, which recommends that children and adolescents accumulate at least 60 min of MVPA per day on average.</p> <p>Or</p> <p>% of children and adolescents meeting at least 60 min of MVPA on at least 4 days/week (when an average cannot be estimated).</p>	<p>Same benchmarks for children and adolescents with disabilities or chronic conditions.</p>

# Organized Sport ~~and~~ and Physical Activity

## Definition

Old	New	CAWD
A subset of PA that is structured, goal oriented, competitive, and contest based.	Structured, supervised, and goal-oriented forms of physical activity, including competitive sports and non-competitive activities, such as fitness classes, dance, and recreational clubs.	Same definition for children and adolescents with disabilities or chronic conditions.

# Organized Sport and Physical Activity

---

## Benchmark

No changes	CAWD
% of children and adolescents who participate in organized sport and/or PA programs.	Same benchmarks for children and adolescents with disabilities or chronic conditions.

# Active Play

## Definition

Old	New	CAWD
Active play may involve symbolic activity or games with or without clearly defined rules; the activity may be unstructured/unorganized, social or solitary, but the distinguishing features are a playful context, combined with activity that is significantly above resting metabolic rate. Active play tends to occur sporadically, with frequent rest periods, which makes it difficult to record.	Play is voluntary engagement in activity that is fun and/or rewarding and usually driven by intrinsic motivation. Active play is a form of play that involves physical activity of any intensity (PLaTO-Net definition).	Same definition for children and adolescents with disabilities or chronic conditions.

# Active Play

## Benchmark

Old	New	CAWD
<ul style="list-style-type: none"><li>• % of children and adolescents who engage in unstructured/unorganized active play at any intensity for more than 2 h/d.</li><li>• % of children and adolescents who report being outdoors for more than 2 h/d.</li></ul>	<ul style="list-style-type: none"><li>• % of children and adolescents who engage in <b>indoor or outdoor</b> unstructured/unorganized active play at any intensity for more than 2 h/d.</li><li>• % of children and adolescents who report being outdoors for more than 2 h/d.</li></ul>	Same benchmarks for children and adolescents with disabilities or chronic conditions.

# Active Transportation

---

## Definition

Old	New	CAWD
Active transportation refers to any form of human-powered transportation— walking, cycling, using a wheelchair, in-line skating, or skateboarding.	Active transportation refers to any form of human-powered transportation (e.g., walking, cycling, using a wheelchair, in-line skating, skateboarding, <b>scootering, kayaking, cross-country skiing</b> ).	Same definition for children and adolescents with disabilities or chronic conditions.

# Active Transportation

---

## Benchmark

No changes	CAWD
% of children and adolescents who use active transportation to get to and from places (eg, school, park, mall, friend's house).	Same benchmark for children and adolescents with disabilities or chronic conditions.

# Sedentary Behaviour

## Definition

Old	New	CAWD
Any waking behaviour characterized by an energy expenditure $\leq 1.5$ metabolic equivalents, while in a sitting, reclining, or lying posture.	<b>Sedentary behaviour</b> is any waking behaviour characterized by an energy expenditure $\leq 1.5$ metabolic equivalents, while in a sitting, reclining, or lying posture. Due to the lack of official time limits for non-screen-related sedentary behavior, this indicator is evaluated using a proxy measure: recreational screen time. <b>Recreational screen time</b> is defined as time spent on screen behaviors that are not related to school or work.	Same definition for children and adolescents with disabilities or chronic conditions.

# Sedentary Behaviour

## Benchmark

Old	New	CAWD
<p>% of children and adolescents who meet the Canadian sedentary behaviour guidelines (5-17 y olds: no more than 2 h of recreational screen time per day).</p> <p>Note: The Guidelines currently provide a time limit recommendation for screen-related pursuits, but not for nonscreen-related pursuits.</p>	<p>% of children and adolescents who meet the Canadian sedentary behaviour guidelines (5-17 y olds: no more than 2 hours of recreational screen time per day).</p>	<p>Same benchmark for children and adolescents with disabilities or chronic conditions.</p>

# Physical Fitness

---

## Definition

Old	New	CAWD
Characteristics that permit a good performance of a given physical task in a specified physical, social, and psychological environment.	Characteristics that <b>determine</b> performance of a given physical task in a specified physical, social, and psychological environment.	For children and adolescents with disabilities or chronic conditions whose condition does not affect their mobility or cardiovascular system, the same definition applies.

# Physical Fitness

## Benchmark

Old	New	CAWD
Average percentile achieved on certain physical fitness indicators based on the normative values published by Tomkinson et al.	<p>Average percentile achieved on specific standardized physical fitness tests (20m shuttle run, handgrip strength, and standing long jump) compared to international normative values.</p> <ul style="list-style-type: none"><li>• The above tests are recommended by the <b>international consensus on the Youth Fitness International Test (YFIT)</b> battery published by Ortega et al., 2025 (<a href="https://www.sciencedirect.com/science/article/pii/S2095254624001704">https://www.sciencedirect.com/science/article/pii/S2095254624001704</a>).</li><li>• For the 20 m shuttle run test, use the global values published by Tomkinson et al., 2017 (<a href="https://bjsm.bmj.com/content/51/21/1545.long">https://bjsm.bmj.com/content/51/21/1545.long</a>).</li><li>• For the handgrip strength and standing long/broad jump test, use the European normative values published by Tomkinson et al., 2018 (<a href="https://bjsm.bmj.com/content/52/22/1445.long">https://bjsm.bmj.com/content/52/22/1445.long</a>)</li><li>• Grades should be based on the average percentile for the various fitness measures available.</li></ul>	For children and adolescents with disabilities or chronic conditions whose condition does not affect their mobility or cardiovascular system, the same benchmarks apply.

# Family and Peers

---

## Definition

Old	New	CAWD
Any member within the family who can control or influence the PA opportunities and participation of children and adolescents in this environment.	Any member within the family ( <b>eg, parents, siblings</b> ) or <b>social circle</b> ( <b>eg, peers, friends</b> ) who can control or influence the PA opportunities and participation of children and adolescents in this environment.	Same definition for children and adolescents with disabilities or chronic conditions.

# Family and Peers

## Benchmark

No changes	CAWD
<ul style="list-style-type: none"><li>• % of family members (eg, parents, guardians) who facilitate PA and sport opportunities for their children (eg, volunteering, coaching, driving, paying for membership fees, and equipment).</li><li>• % of parents who meet the Global Recommendations on Physical Activity for Health, which recommend that adults accumulate at least 150 min of moderate-intensity aerobic PA throughout the week or do at least 75 min of vigorous-intensity aerobic PA throughout the week or an equivalent combination of moderate- and vigorous-intensity PA.</li><li>• % of family members (eg, parents, guardians) who are physically active with their kids.</li><li>• % of children and adolescents with friends and peers who encourage and support them to be physically active.</li><li>• % of children and adolescents who encourage and support their friends and peers to be physically active.</li></ul>	Same benchmarks for children and adolescents with disabilities or chronic conditions.

# School

---

## Definition

No changes	CAWD
Any policies, organizational factors (eg, infrastructure, accountability for policy implementation), or student factors (eg, PA options based on age, gender or ethnicity) in the school environment that can influence the physical activity opportunities and participation of children and adolescents in this environment.	Same definition for children and adolescents with disabilities or chronic conditions.

# School

## Benchmark

### No change to previous benchmarks

- % of schools with active school policies (eg, daily PE, daily PA, recess, “everyone plays” approach, bike racks at school, traffic calming on school property, outdoor time).
- % of schools where the majority ( $\geq 80\%$ ) of students are taught by a PE specialist.
- % of schools where the majority ( $\geq 80\%$ ) of students are offered the mandated amount of PE (for the given state/territory/region/country).
- % of schools that offer PA opportunities (excluding PE) to the majority ( $> 80\%$ ) of their students.
- % of parents who report their children and adolescents have access to PA opportunities at school in addition to PE classes.
- % of schools with students who have regular access to facilities and equipment that support PA (eg, gymnasium, outdoor playgrounds, sporting fields, multipurpose space for PA, equipment in good condition).

### Additional benchmark for PE

**% reflecting the comprehensiveness of the PE curriculum. Recommended grading system for this benchmark:**

- 100% - a national PE curriculum exists, and it is comprehensive (includes minimum time requirements, clear objectives, health and performance focus, inclusivity for CAWD)
- 75% - a national PE curriculum exists, but it lacks comprehensiveness (e.g., missing minimum time requirements, inclusivity for CAWD, or objectives are unclear)
- 50% - a national PE curriculum exists, but it is weakly implemented (e.g., does not mandate minimum time or adherence is low across schools)
- 25% - No national PE curriculum exists, but local or regional curricula are available and implemented to some extent
- 0% - No national or regional PE curriculum exists

### CAWD

% of the schools with sport facilities complying with accessibility norms.

# Community and Environment

## Definition

Old	New	CAWD
Any policies or organizational factors (eg, infrastructure, accountability for policy implementation) in the municipal environment that can influence the PA opportunities and participation of children and adolescents in this environment.	Any policies or organizational factors (eg, infrastructure, accountability for policy implementation) <b>in the local (eg, town, city, or neighbourhood) environment and residents' perceptions about their local environment (eg, safety, access to green spaces)</b> that can influence the PA opportunities and participation of children and adolescents in this environment.	Same definition for children and adolescents with disabilities or chronic conditions.

# Community and Environment

## Benchmark

No changes	CAWD
<ul style="list-style-type: none"><li>• % of children or parents who perceive their community/municipality is doing a good job at promoting physical activity (eg, variety, location, cost, quality).</li><li>• % of communities/municipalities that report they have policies promoting PA.</li><li>• % of communities/municipalities that report they have infrastructure (eg, sidewalks, trails, paths, bike lanes) specifically geared toward promoting PA.</li><li>• % of children or parents who report having facilities, programs, parks, and playgrounds available to them in their community.</li><li>• % of children or parents who report living in a safe neighborhood where they can be physically active.</li><li>• % of children or parents who report having well-maintained facilities, parks, and playgrounds in their community that are safe to use.</li></ul>	<p>Same benchmarks for children and adolescents with disabilities or chronic conditions.</p> <p>Additional benchmarks:</p> <ul style="list-style-type: none"><li>• % of children or parents who report having accessible, adapted and inclusive programs, parks, and playgrounds in their community</li><li>• % of communities/municipalities with accessible infrastructure for children with disabilities</li></ul>

# Government

---

## Definition

No changes	CAWD
Any governmental body with authority to influence physical activity opportunities or participation of children and adolescents through policy, legislation, or regulation.	Same definition for children and adolescents with disabilities or chronic conditions provided specific inclusion of accessibility clauses.

# Government

## Benchmark

Old	New	CAWD
<ul style="list-style-type: none"><li>• Evidence of leadership and commitment in providing PA opportunities for all children and adolescents.</li><li>• Allocated funds and resources for the implementation of PA promotion strategies and initiatives for all children and adolescents. Demonstrated progress through the key stages of public policy making (ie, policy agenda, policy formation, policy implementation, policy evaluation, and decisions about the future).</li><li>• HEPA PAT (version 2) and the scoring rubric published by Ward et al.</li></ul>	<p><b>Consensus-based grade taking into account the following:</b></p> <ul style="list-style-type: none"><li>• Evidence of leadership and commitment in providing PA opportunities for all children and adolescents.</li><li>• Allocated funds and resources for the implementation of PA promotion strategies and initiatives for all children and adolescents.</li><li>• Demonstrated progress through the key stages of public policy making (ie, policy agenda, policy formation, policy implementation, policy evaluation, and decisions about the future).</li></ul> <p>An additional approach to grading (optional): HEPA PAT (version 2) and the scoring rubric (<a href="https://academic.oup.com/heapro/article-abstract/36/4/1151/5961615">https://academic.oup.com/heapro/article-abstract/36/4/1151/5961615</a>) published by Ward et al., 2021.</p>	Same benchmarks for children and adolescents with disabilities or chronic conditions provided specific inclusion of accessibility clauses.

# General instructions for all indicators

---

1. When multiple benchmarks are available, use as many as possible based on the data availability in your country/jurisdiction to calculate the indicator grade.  
**Exception:** Overall PA indicator - use one of the two benchmarks, depending on the data availability in your country/jurisdiction.
2. To calculate the indicator grade, use a simple average of the percentages across all benchmarks for which data are available in your country/jurisdiction. Your team may choose to use a weighted average if clearly justified (e.g., by giving more weight to more representative or recent data).
3. If you have any additional relevant data not covered by existing benchmarks (e.g., accelerometer-measured sedentary time data, information on frequency/duration of active transportation), consider reporting it in your Report Card.
4. For all indicators, include device-measured data when possible.

# General approach to grading

1. Assign **one grade** for each indicator (according to the grading rubric)
2. Within that grade provide the following **subset of data and sub-grades**:
  - for the CAWD subgroup
  - for gender subgroups (where possible)
  - for other equity subgroups (e.g., SES, urban/rural)(where possible)

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

# Any questions?

