

**Supplementary Table 2. Indicator definitions and grading benchmarks from Global Matrix 2.0 and 3.0**

Indicator	Definition	Global Matrix 2.0 Benchmark	Global Matrix 3.0 Benchmark	Changes Made
Overall physical activity <sup>a)</sup>	Any bodily movement produced by skeletal muscles that requires energy expenditure.	% of children and youth who meet physical activity guidelines	% of children and youth who meet the Global Recommendations on Physical Activity for Health, which recommend that children and youth accumulate at least 60 min of moderate- to vigorous-intensity physical activity per day on average.  Or % of children and youth meeting the guidelines on at least 4 d a week (when an average cannot be estimated).	Benchmark was changed to be based on Global Recommendations on Physical Activity for Health. Addition of benchmark for when average per week data cannot be estimated
Organized sport and physical activity	A subset of PA that is structured, goal oriented, competitive, and contest based.	% of children and youth who participate in organized sport and/or physical activity programs	% of children and youth who participate in organized sport and/or physical activity programs.	No changes made.
Active play <sup>a)</sup>	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.	% of children and youth who engage in unstructured/unorganized active play for several hours a day	% of children and youth who engage in unstructured/unorganized active play at any intensity for more than 2 h a day.  % of children and youth who report being outdoors for more than 2 h a day.	Benchmark was changed to specify cutoff values of at least 2 hours/day
Active transportation	Active transportation refers to any form of human-powered transportation—walking, cycling, using a wheelchair, in-line skating, or skateboarding	% of children and youth who use active transportation to get to and from places (school, park, mall, friend's place)	% of children and youth who use active transportation to get to and from places (e.g., school, park, mall, friend's house).	No changes made.
Sedentary behaviours <sup>a)</sup>	Any waking behavior characterized by an energy expenditure $\leq 1.5$ metabolic equivalents, while in a sitting, reclining, or lying posture.	% of children and youth who meet sedentary behavior or screen-time guidelines	% of children and youth who meet the Canadian Sedentary Behavior Guidelines (5- to 17-y-olds: no more than 2 h of recreational screen time per day). Note: the Guidelines currently provide a time limit recommendation for screen-related pursuits, but not for nonscreenrelated pursuits.	Benchmark was updated with cutoff values based on Canadian Sedentary Behavior Guidelines.
Physical fitness <sup>a)</sup>	Characteristics that permit a good performance of a given physical task in a specified physical, social, and psychological environment.	N/A	Average percentile achieved on certain physical fitness indicators based on the normative values published by Tomkinson et al.	Physical Fitness indicator was newly added for GM 3.0.
Family and peers <sup>a)</sup>	Any member within the family who can control or influence the PA opportunities and participation of children and adolescents in this environment.	% of parents who facilitate physical activity and sport opportunities for their children (e.g., volunteering, coaching, driving, paying for membership fees and equipment)  % of parents who meet the physical activity guidelines for adults  % of parents who are physically active with their kids  % of children and youth with friends and peers who encourage and support them to be physically active  % of children and youth who encourage and support their friends and peers to be physically active	% of family members (e.g., parents, guardians) who facilitate physical activity and sport opportunities for their children (eg, volunteering, coaching, driving, paying for membership fees and equipment).  % of parents who meet the Global Recommendations on Physical Activity for Health, which recommend that adults accumulate at least 150 min of moderate-intensity aerobic physical activity throughout the week or do at least 75 min of vigorous-intensity aerobic physical activity throughout the week or an equivalent combination of moderate- and vigorous-intensity physical activity.  % of family members (e.g., parents, guardians) who are physically active with their kids.  % of children and youth with friends and peers who encourage and support them to be physically active.  % of children and youth who encourage and support their friends and peers to be physically active.	Benchmark wording was changed from "parents" to "family members" for 2 benchmarks under family and peers.  Benchmark was updated with cutoff values based on Global Recommendations on Physical Activity for Health Guidelines.

(Continued)

**Supplementary Table 2. Indicator definitions and grading benchmarks from Global Matrix 2.0 and 3.0 (Continued)**

Indicator	Definition	Global Matrix 2.0 Benchmark	Global Matrix 3.0 Benchmark	Changes Made
School <sup>a)</sup>	Any policies, organizational factors (e.g., infrastructure, account-ability for policy implementation), or student factors (e.g., 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.	% of schools with active school policies (e.g., Daily Physical Activity, recess, “everyone plays” approach, bike racks at school, traffic calming on school property, outdoor time)	% of schools with active school policies (e.g., daily physical education (PE), daily physical activity, recess, “everyone plays” approach, bike racks at school, traffic calming on school property, outdoor time).	
		% of schools where the majority (≥ 80%) of students are taught by a PE specialist	% of schools where the majority (≥80%) of students are taught by a PE specialist.	
		% of schools where the majority (≥80 %) of students are offered at least 150 min of PE per week	% of schools where the majority (≥80%) of students are offered the mandated amount of PE (for the given state/territory/region/country).	Changed from at least 150 minutes of PE to mandated amount of PE based on location (state/territory/ region/country).
		% of schools that offer physical activity opportunities (excluding PE) to the majority (≥80%) of students	% of schools that offer physical activity opportunities (excluding PE) to the majority (≥80%) of their students.	
		% of parents with children and youth who have access to physical activity opportunities at school in addition to PE	% of parents who report their children and youth have access to physical activity opportunities at school in addition to PE	
Community and environment <sup>a)</sup>	Any policies or organizational factors (e.g., infrastructure, account-ability for policy implementation) in the municipal environment that can influence the PA opportunities and participation of children and adolescents in this environment	% of schools with students who have regular access to facilities and equipment that support physical activity (e.g., gymnasium, outdoor playgrounds, sporting fields, equipment in good condition)	% of schools with students who have regular access to facilities and equipment that support physical activity (e.g., gymnasium, outdoor playgrounds, sporting fields, multipurpose space for physical activity, equipment in good condition).	The inclusion of "multipurpose space for physical activity" was added.
		% of children or parents who perceive their community/municipality is doing a good job at promoting physical activity (e.g., variety, location, cost, quality)	% of children or parents who perceive their community/municipality is doing a good job at promoting physical activity (e.g., variety, location, cost, quality).	The benchmark regarding outdoor activity was moved under the Active Play Indicator for Global Matrix 3.0.
		% of communities/municipalities that report they have policies promoting physical activity	% of communities/municipalities that report they have policies promoting physical activity.	
		% of communities/municipalities that report infrastructure (e.g., sidewalks, trails, paths, bike lanes) specifically geared toward promoting physical activity	% of communities/municipalities that report they have infrastructure (e.g., sidewalks, trails, paths, bike lanes) specifically geared toward promoting physical activity.	
		% of children or parents with facilities, programs, parks and playgrounds available to them in their community	% of children or parents who report having facilities, programs, parks, and playgrounds available to them in their community.	
		% of children or parents living in a safe neighborhood where they can be physically active	% of children or parents who report living in a safe neighborhood where they can be physically active.	
		% of children or parents reporting well-maintained facilities, parks/playgrounds in their community that are safe	% of children or parents who report having well-maintained facilities, parks, and playgrounds in their community that are safe to use.	
Government	Any governmental body with authority to influence physical activity opportunities or participation of children and adolescents through policy, legislation, or regulation.	Evidence of leadership and commitment in providing physical activity opportunities for all children and youth	Evidence of leadership and commitment in providing physical activity opportunities for all children and youth.	No changes made.
		Allocated funds and resources for the implementation of physical activity promotion strategies and initiatives for all children and youth	Allocated funds and resources for the implementation of physical activity promotion strategies and initiatives for all children and youth. Demonstrated progress through the key stages of public policy making (i.e., policy agenda, policy formation, policy implementation, policy evaluation and decisions about the future).	
		Demonstrated progress through the key stages of public policy making (i.e., policy agenda, policy formation, policy implementation, policy evaluation and decisions about the future)		

Benchmarks for Global Matrix 4.0 are not shown because they are essentially the same in Global Matrix 3.0; please refer to Aubert et al.<sup>20)</sup> 2022 for more details.

<sup>a)</sup>Indicators with modifications in benchmark(s) between Global Matrix 2.0 and Global Matrix 3.0.