

# Global Matrix 4.0 Physical Fitness Indicator: Rationale and justification for benchmarks, key points on the assessment

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- Physical Fitness indicator was added and included in Global Matrix 3.0 based on feedback from participating countries after Global Matrix 2.0
- Does not fit in the “behaviour” or “sources of influence” framework so “individual characteristic” category was created (other countries have also used this for indicators of “Obesity” and “Physical Literacy”)

# GM 3.0 Findings – Physical Fitness

- Benchmark: average percentile achieved on physical fitness indicators based on global normative values
- Global average: C-
- HDI variation
  - low and medium HDI: F (only India reported a grade)
  - high HDI: D
  - very high HDI: C-
- 27 INC grades so caution should be used in making comparisons across HDI
- Grades ranged from A in Japan to F in India
- Significant positive correlation with country public health expenditure and negative correlation with Gini and Gender Inequality Indices

# European normative values for physical fitness in children and adolescents aged 9–17 years: results from 2 779 165 Eurofit performances representing 30 countries

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► Additional material is published online only. To view please visit the journal online (<http://dx.doi.org/10.1136/bjsports-2017-098253>).

## ABSTRACT

**Objective** To develop sex-specific and age-specific normative values for the nine Eurofit tests in European children and adolescents aged 9–17 years.

**Methods** A systematic review was undertaken to

physical activity levels.<sup>2–5</sup> Several studies have shown considerably stronger inverse relationships between CRF and mortality than between physical activity and mortality,<sup>6–7</sup> indicating that CRF is a more powerful predictor of

# **Global Matrix 3.0 Physical Activity Report Card Grades for Children and Youth: Results and Analysis From 49 Countries**

“However, many differences in the data informing the grades for this indicator were observed across countries in terms of number fitness indicators reported, normative value used, age range, and sample size. Given the amount of “INC” grades and variability in the data informing the grades for this indicator, the comparison between HDI groupings is difficult. Cardiorespiratory fitness (measured with the 20-m shuttle run test) was found to be associated with favorable indicators of adiposity and some indicators of cardio-metabolic, cognitive, and psychosocial health in boys and girls from 32 countries in a recent systematic review.<sup>87</sup> Therefore, cardiorespiratory fitness is an important indicator of current and future health among school-aged children and youth and can be used as a holistic indicator of population health in this age group.<sup>88</sup> These findings highlight that global surveillance of physical fitness, which represents a simple and cost-effective assessment<sup>89</sup> that could be integrated in physical education classes, should be a priority in all countries.”

**Active Healthy Kids Global Alliance**  
***Global Matrix 3.0***  
***Post-release Workshop and***  
***Information Session***



## So how did we do with Global Matrix 3.0?

- Country leader roundtable comments on
  - Report card development experience – successes and challenges
  - Global Matrix 3.0 launch experience
  - Interest in Global Matrix 4.0
- Suggestions for revisions to: Model, Indicators, Benchmarks, Grading Scheme, Form and Format, Process, Leadership, Outputs, Data quality/harmonization/auditing



Contents lists available at [ScienceDirect](#)

## Journal of Exercise Science & Fitness

journal homepage: [www.elsevier.com/locate/jesf](http://www.elsevier.com/locate/jesf)



# Evaluation of the process and outcomes of the Global Matrix 3.0 of physical activity grades for children and youth

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**Table 7**

Summary of the challenges/issues reported in the Report Card Leader Surveys 1, 2, and 3, and in the Mentoring Surveys 1 and 2.

	Mentoring Survey 1	Mentoring Survey 2	Report Card Leader Survey 1	Report Card Leader Survey 2	Report Card Leader Survey 3	Total
Lack of new data/ good quality representative data			13	48	14	75
Difficulty to find funding			7	15	26	48
Benchmarks/indicators are unclear/not detailed enough	1		3	12	12	28
Lack of support from the mentor	7	6	1	2	1	17
Difficulty to recruit Report Card team members/to have a complete Report Card team			4	6	1	11
All the Report Card team members were not responsive/ contributing at the same level				5	4	9
Registration fees (for the Global Matrix or Movement to Move event) were too expensive			4	1	2	7
The short Report Card articles were too restrictive					7	7
Difficulty to reach a target audience/ have an impact in the media					6	6
Mentored Report Card leader was not responsive/ cooperative	1	1	1		2	5
Challenging deadline/ complain about deadline change/ unclear deadline	1		3	1		5
Benchmarks and indicator are not relevant and adapted to all context (low and medium HDI countries)			2	1	2	5

Note: This table presents the count of how many times each issue or challenge was *mentioned*. Several comments contained more than one mention of issue or challenge. Only the issues that were raised a minimum of five times are presented. As there were several open spaces in each survey, the same issue could potentially be mentioned several times by the same Report Card leader.

**Table 8**

Descriptive statistics of the confidence ratings for the physical activity grades reported in the Report Card Leader Survey 2.

	PA	SP	AP	AT	SB	PF	FAM	SCH	COM	GOV
Number of replies	46	46	45	46	46	44	45	45	46	46
Mean (out of 10)	8.1	7.8	6.4	8.0	7.4	6.8	6.4	7.7	7.3	7.1
Ratings >6	85%	80%	64%	83%	80%	68%	60%	84%	74%	67%
Max	10	10	10	10	10	10	10	10	10	10
Min	4	2	0	2	2	0	0	0	0	0

Notes: PA = Physical Activity; SP = Organized Sport and Physical Activity; AP = Active Play; AT = Active Transportation; SB = Sedentary Behaviors; PF = Physical Fitness; SCH = School; COM = Community and Environment; FAM = Family and Peers; GOV = Government. Some Report Card leaders specified in comments that that they decided to rate their confidence level “0” for the incomplete grades of their Report Card while some others specified that they rated them “10”.

# Other possible roles for the AHKGA

(from GM 3.0 post-release workshop presentation)

- Offer guidance for the development of national strategies / interventions / programs
- Global fitness data repository and norms portal
- Sleep and Activity Database for the Early Years (SADEY)
- Standardized measurement protocols
- Other?

# Global Priorities for Action

(from GM 3.0 launch)



- Create a global movement for comprehensive school physical activity programs that support and allow ALL children and youth to meet the physical activity guidelines through a variety of strategic interventions (e.g., active recess options, physical activity breaks, compulsory physical education)
- Create a global culture of active kids / active people in all settings, prioritizing active transportation above other modes of transportation
- Invest in comprehensive social interventions and research to improve implementation and uptake strategies to manage recreational screen time among children and youth
- Develop a standardized global surveillance system for physical activity and related indicators among children and youth to fill the current gaps, especially in low- and medium-income countries
- Evaluate the implementation, efficacy, and effectiveness of national strategies and policies

# Discussion

- Comments and concerns regarding current approach?
- Alternate suggestions?
  - Consider global situation and data availability
  - Consider comparability to Global Matrix 3.0
- Remember individual countries have freedom to add additional/different indicators, but must also provide grades for Global Matrix 4.0 indicators
- Considerations for now - Global Matrix 4.0 - vs beyond
- Link to European Union funding discussions from a few weeks ago



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