

## Results From Kenya's 2016 Report Card on Physical Activity for Children and Youth

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**Background:** Kenya's 2016 report card aimed to highlight the health and well-being of Kenyan children and youth using the best available evidence on the physical activity of Kenyan children and youth. The report pointed at areas where Kenya was succeeding and areas where more action is required. **Methods:** Inclusive analyses of available data sources on the core indicators related to physical activity and body weights of Kenyan children and youth (5 to 17 years) were conducted. These were assigned grades based on a set of specific criteria. **Results:** Results show that Active Play, Active Transportation, Overweight and Obesity, and Sedentary Behavior were favorable with a grade of *B*. Overall Physical Activity, Organized Sport Participation, and School (infrastructure, policies, and programs) each received a grade of *C*, while Family and Peers, Government and Nongovernment organizations, as well as the Community and the Built Environment were assigned grade *D*. **Conclusions:** Over 72% of Kenyan children and youth use active transportation to and from school and in their daily lives. Although majority of the children and youth have normal body weight, there is need to ensure that they meet and maintain the physical activity levels recommended by the World Health Organization. More needs to be done especially in relation to the governmental and nongovernmental organizations, organized sports participation, as well as involvement of family and peers in promoting healthy active lifestyles among Kenyan children and youth. More representative data for all indicators are required in Kenya.

**Keywords:** active transportation, adiposity, non-communicable diseases, sedentary behavior, policy

Children and youth need opportunities to be physically active to grow and develop.<sup>1,2</sup> There is evidence that physically active individuals are likely to be attentive in class and hence do well academically.<sup>3</sup> A physical activity (PA) transition has been reported in many developing countries including Kenya, particularly among urban populations.<sup>4</sup> In addition, there has been a global increase in prevalence of chronic noncommunicable diseases (NCDs) such as coronary heart diseases, Type 2 Diabetes and some types of cancers.<sup>5</sup> Various studies have also demonstrated a strong association between overweight/obesity and chronic NCDs.<sup>6</sup> The noncommunicable disease burden appears to be increasing globally, with an increasing prevalence in developing countries.<sup>6</sup> The increasing prevalence of NCDs in these countries is largely due to PA and nutrition transitions, marked with changes in patterns of consumption of food and alcohol, increased tobacco use, sedentary lifestyles, high levels of stress, and low levels of PA.<sup>7,8</sup> Childhood overweight and obesity

is significantly associated with increased risk of obesity, physical morbidity, and premature mortality in adulthood.<sup>9</sup> However, children who attain a normal weight by adolescence have better cardiovascular disease risk factor profiles compared with those remaining overweight.<sup>10</sup>

The World Health Organization (WHO) classifies physical inactivity and overweight/obesity as the fourth and fifth leading causes of global mortality, and one of the greatest health challenges and determinants for various chronic diseases such as heart disease, hypertension, diabetes, and psychosocial problems in the 21st century.<sup>11</sup> This growing population health threat has garnered much attention in view of the declaration and global campaign on the prevention and control of NCDs signed by the United Nations (UN) in 2011 and the recently adopted UN Sustainable Development Goals (SDGs).<sup>12,13</sup> In addition, the Kenya Vision 2030, a national development blue print is focused on providing high quality healthcare for all Kenyan citizens in a clean and secure environment by the year 2030. Further and in light of the United Nations Sustainable Development Goals (UN-SDGs) there is a need to focus on promoting healthy active lifestyles for all Kenyan children and youth and meet Kenya's long-term national development agenda.<sup>14</sup>

The aim of this report card is to synthesize the best available evidence and provide increased awareness on issues surrounding PA of children and youth. This article, therefore, is aimed at summarizing the results of the Kenya 2016 Report Card on Physical Activity for Children and Youth produced by Healthy Active Kids Kenya (HAKK).<sup>15</sup> In particular, the paper highlights areas where Kenya is succeeding as a nation and puts emphasis on areas where more action is needed to realize healthy active living goals for children and youth. The HAKK plans to produce the Report Card periodically as a means of monitoring healthy active living behaviors of Kenyan children and youth.

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## Methodology

This report card was conceptualized, designed and developed by a multidisciplinary team of 8 experts drawn from different institutions of higher learning in Kenya and produced by the HAKK. The members of the report card working group played various roles and responsibilities in the development and production of Kenya's 2016 Report Card on the PA and body weight of children and youth. The team identified and synthesized key articles designed and produced the final report card and developed an uptake strategy including media engagement. Data sources included published literature relating to PA, overweight and obesity, sedentary behaviors and fitness levels. Studies were identified by searching the MEDLINE, Embase, Africa Index Medicus, Global Health, Geobase, and EPPI Centre electronic databases. All published, peer-reviewed studies were included if they reported use of subjective or objective measures in healthy or population-based samples of children and youth 5 to 17 years. In addition, presentations at peer-attended fora, unpublished graduate student theses, and data from other organizations and agencies such as the Kenya National Bureau of Statistics and the Kenya Demographic Health Survey informed the development of this report card. Further, the recently concluded International Study of Childhood Obesity, Lifestyle and Environment (ISCOLE-Kenya) also contributed to the pool of data sources. ISCOLE-Kenya was carried out to investigate the influence of behavioral settings and the physical, social and policy environments on the observed relationship between lifestyle characteristics and weight status in school-aged children recruited from schools in Nairobi.<sup>16</sup>

Data on the report card indicators Overall Physical Activity Levels, Organized Sport Participation, Active Play, Active Transportation, Sedentary Behaviors, Family and Peers (infrastructure, support, parental/peer behaviors), School (infrastructure, policies and programs), Community and the Built Environment (infrastructure, policies, programs, safety), Government and Nongovernment

(strategies, policies, investments), and Overweight and Obesity were collected and analyzed by the panel of experts. Evidence regarding the promotion of healthy active lifestyle was considered to inform potential initiatives and programs at home, at school, and in the community, aimed at promoting active and healthy lifestyles for Kenyan children and youth. By consensus, a panel of 8 experts assigned grades based on a set of specific criteria and a comprehensive analyses of available data sources on Kenyan children since 2010 (5 years). The experts were drawn from various fields including exercise and sports science, nutrition, medical physiologists, environmental planning and management, public health, transport geography, as well as physical and health education.

## Results and Discussion

The 2016 Kenyan Report Card is the third report card completed in Kenya after producing the first one in 2011 and the second one in 2014 by the HAKK.<sup>15,17</sup> The covers of the 2011 and 2014 Kenyan Report Cards are shown in Figure 1.

The photos on the cover of the 2016 report card were identified and determined based on where Kenya stands currently as a nation in-terms of PA and active transport. Noting that Kenya is a country of great middle and long distance runners and Olympians and currently faced with a PA transition, the pictures on the cover of the report card a country trying to run away from unhealthy lifestyle into an active and healthy future through various means. Further, the pictures communicate the fact that one does not need sophisticated items, shoes, or facilities to be physically active. Kenyan needs local solutions to address local challenges. We need to use existing resources to promote healthy lifestyle. Lastly, the cover pictures indicate that children and youth should be allowed and supported to be physically active for good health and long life. The cover of Kenya's 2016 Report Card is illustrated in Figure 2. Grades are reported in Table 1.

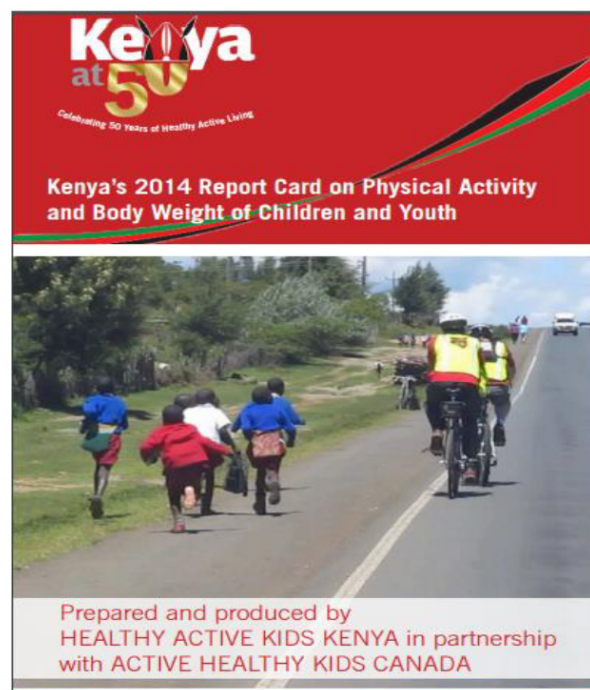
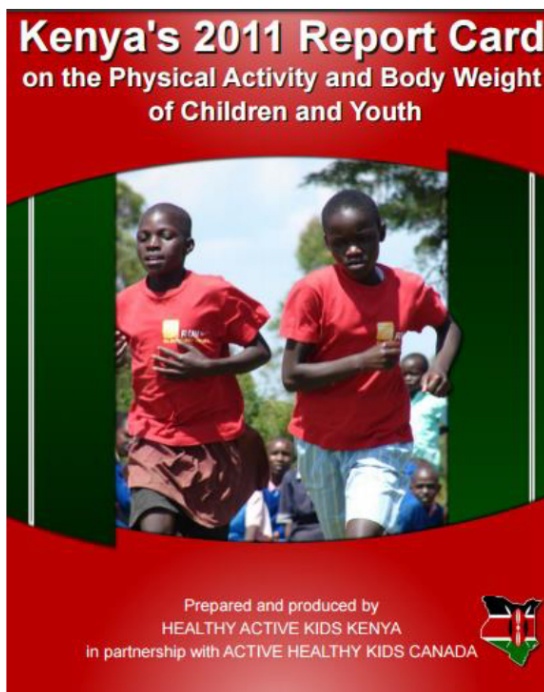
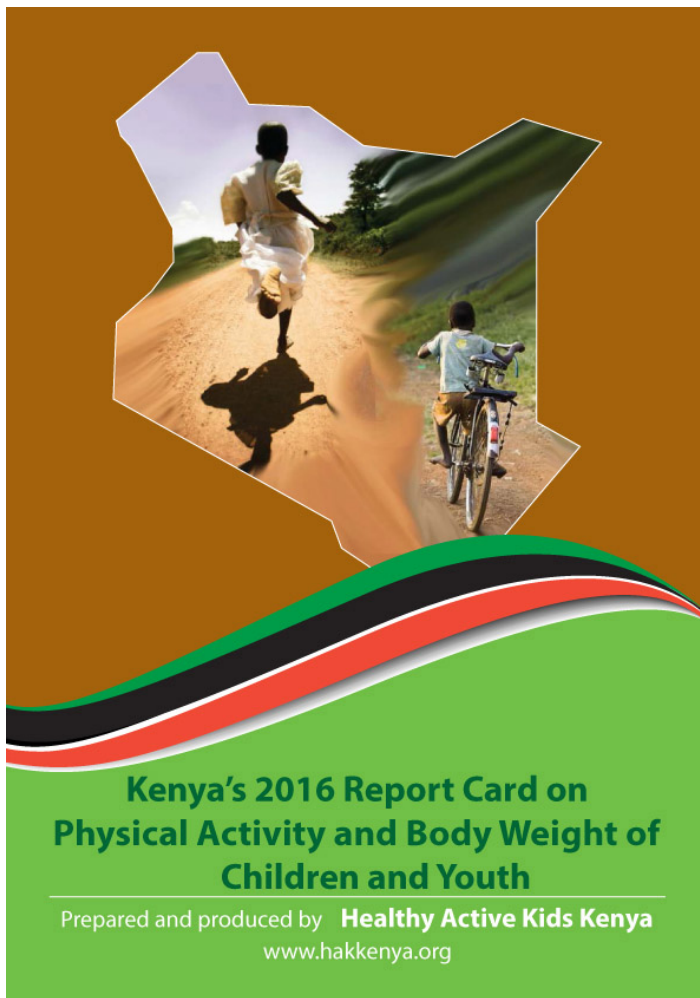


Figure 1 — Front covers of the 2011 and 2014 Kenyan Report Cards.



**Figure 2** — Front cover of the 2016 Kenyan Report Card.

**Table 1** Grades According to Physical Activity Indicator in Kenya's 2016 Report Card on Physical Activity for Children and Youth

Indicator	Grades
Overall Physical Activity Levels	C
Organized Sport Participation	C
Active Play	B
Active Transportation	B
Sedentary Behaviors	B
Family and Peers	D
School	C
Community and the Built Environment	D
Government Strategies and Investments	C
Overweight and Obesity	B

*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.

## Overall Physical Activity Levels: C

A grade of *C* was assigned to Overall Physical Activity given that only about half of Kenyan children and youth meet the global guidelines for PA, which recommends accumulation of at least 60 minutes of daily moderate-to-vigorous physical activity (MVPA). Available data on PA was sufficient to inform the grading process. The evidence used to inform the grading for this indicator included results of systematic reviews and those from the ISCOLE-Kenya research.<sup>17-19</sup> It is, however, noted that a majority of studies were based on nonrepresentative samples. This grade has remained the same compared with the grade of *C* assigned in 2014.

## Organized Sport Participation: C

Organized Sport was assigned a *C* grade. The ISCOLE-Kenya study found that only one-half of the participating schools offered organized soccer, volleyball, track and field, and swimming to the children and youth.<sup>20</sup> Although Kenya is a sporting nation having achieved considerable success in athletics and rugby, only about half of schools studied offered organized sports that allow children's participation.<sup>20</sup> Provision of sufficient sports facilities both in school and at the community level is key as facilities normally attract children and youth to participate in PA. There are different factors that motivate Kenyans to participate in organized sports and physically active children and youth have better academic performance, body image, leadership qualities, and an element of team spirit than those who do not participate in sports.<sup>20,21</sup> Participation in sports also develops the spirit of give and take and hence inculcating the spirit of fair play. The grade is based on paucity of data and the best available evidence. A more representative study is required in this area as well.

## Active Play: B

Active play has the potential to make a valuable contribution to children's overall PA, while providing additional cognitive, social, and emotional benefits. This indicator was awarded a grade of *B* in the Kenyan 2016 report card. Access to active play in a natural environment and outdoors is essential for the healthy growth and development of a child.<sup>20,22,23</sup> Available data showed that the average time spent in outdoor play, either before and after school, or on weekend-days, was 6.0 hours, while studies on the rural population also reported engagement in active play albeit included with other leisure time activities and not quantified as a separate entity.<sup>24</sup>

## Active Transportation: B

Active Transportation refers to any form of nonmotorized transportation such as walking, cycling, nonmechanized wheel chairing, running, and skateboarding, among others. This indicator was awarded a grade of *B*, reflecting that we are succeeding with well over half of Kenyan children and youth. The evidence revealed that a large percentage (over 87%) of children living in rural Kenya use active transport to and from school.<sup>25</sup> It is, however, worth noting that active transport among Kenyan children and youth is lower in urban areas and in youth attending higher SES schools.

## Sedentary Behavior: B

Sedentary Behavior refers to any waking activity characterized by an energy expenditure  $\leq 1.5$  metabolic equivalents and a sitting or reclining posture. In general this means that any time a person

is sitting or lying down, they are engaging in sedentary behavior. Common sedentary behaviors include television viewing, video game playing, computer use (collectively termed “screen time”), driving automobiles, and reading. This indicator was awarded a grade of *B*. Although there is paucity of literature in this area in Kenya, a recent study established that daily direct measurement on sedentary time among Kenyan children was 398 minutes (6.6 hours).<sup>25</sup> This included time used in sedentary behaviors at school. The results established that children in urban areas spent more time on screen related behaviors on weekend days than recommended. Another study, established that rural children spent less time in sedentary activities ( $555 \pm 67$  minutes/day) than their contemporaries in the urban neighborhoods ( $678 \pm 95$  minutes/day).<sup>20</sup>

### Family and Peers: *D*

Family and peers play a significant role in the development of healthy behavior among children and youth. This indicator was awarded a grade of *D* in the 2016 Kenyan report card based on evidence of parental perception, education attainment, and household SES. Results from the ISCOLE-Kenya study show a decreasing trend in the number of children who met the guidelines for PA with increasing maternal and paternal educational attainment. Children of mothers with a high school education (compared with primary school or less) were 65% less likely to meet the PA guidelines, while children of mothers with a diploma, higher diploma or degree (compared with primary school or less), were 75% less likely to meet the guidelines. In addition, the proportion of children meeting the PA guidelines decreased with increasing household SES.<sup>20</sup>

Supportive family members, friends, and peers are likely to increase time spent in physically active pursuits.<sup>20</sup> Kenyan parents have a major responsibility to enhance a healthy active lifestyle among their children, however, many lack adequate knowledge on basic requirements regarding healthy eating and PA and mostly are biased when reporting on their children’s PA levels and body weights.<sup>20</sup> A recent study further established that with increase in maternal and paternal education levels and household SES, the number of children meeting the PA guidelines decreased.<sup>20</sup> This informed the grading of this indicator.

### School (Infrastructure, Policies, Programs): *C*

Schools are identified as a key setting for public health strategies to lower or prevent the prevalence of overweight, obesity and physical inactivity. There is a government policy in Kenya that requires allocation of 35 minutes for physical education (PE), 3 times a week during school days. A study established that there was significant public support for physical education (PE) as a subject to be taught in all public schools in Kenya.<sup>20</sup> Another study established that most children (86.8%) reported to have participated in PE lessons 1 to 3 days in a week. Only 13.8% of children from private schools and 13.2% of children from public schools indicated they did not take part in any PE classes during the past week.<sup>24</sup> There is, however, anecdotal evidence that even though PE lessons are scheduled in the timetable as per government policy, that time is sometimes used to teach examinable subjects due to pressure on schools to perform well academically. More work still needs to be done in this area to ensure compliance with government policies. The school infrastructure, policies, and programs category was awarded a grade of *C*, as was the case in 2014.

### Community and the Built Environment: *D*

The built environment is known to be a determinant of PA. There are significant differences between urban and rural infrastructure and their influence on PA. This indicator was awarded a grade of *D* based on expert consensus. While children living in the rural areas are more active than their urban counterparts, this is not related to the poorly built environments in rural settings. There are also no known nongovernmental or governmental approaches to tackle the built environment and its impact on children’s PA in Kenya.

### Government and Nongovernment (Strategies, Policies, Investments): *D*

In 2015, Kenya through the National Council for Children’s Services published a National Plan of Action for Children.<sup>25</sup> The plan is anchored on the United Nations Convention on the Rights of the Child (UNCRC) which Kenya signed in 1990. This was a major milestone in the promotion and protection of children’s rights and welfare in Kenya. The plan recognizes the right of all Kenyan children to leisure, play and recreation appropriate to the age of the child. A recent study aimed at establishing the impact of policies on the Development and Management of Recreational Spaces in Nairobi, Kenya found that a resident of Nairobi County has 22 m<sup>2</sup> of recreational space on average from a high of 159 m<sup>2</sup> at independence.<sup>26</sup> This translates to 2.162 acres per thousand residents compared with the best practice in the United States and in Europe of 6 to 10 acres per thousand. Only 5% of Nairobi County is currently available for recreational spaces. The study further found that due to large geopolitical neglect, the management and development of recreational spaces has been left wanting, and in the process, various private sector arrangements are leading the way in design and management. The study also found that education affects the type of space visited, indicating social and political differences in access. Access to spaces is largely skewed to the higher social classes who have access to ‘members only’ parks and golf courses. The study also found out that on average, the Nairobi County residents take between 22 to 90 minutes to access recreational spaces. More multisectoral action needs to be done to achieve favorable grades for this indicator, which received a *D* grade.

### Overweight and Obesity: *B*

Kenya is faced with a double-edged sword, whereby overweight and obesity among children and youth coexists with stunting and underweight. Like in the 2014 report card, this indicator was awarded a grade of *B*. In children, being overweight has been known to impact on self-esteem, possibility of developing juvenile diabetes and other diseases association to excess weight. A recent study conducted in Nairobi city county, established that 3.7% of children were underweight, 75.5% normal weight, 14.4% overweight, and 6.4% obese (20.8% overweight/obese) based on WHO cut-points.<sup>27</sup>

It is crucial to note that child under-nutrition remains one of Sub-Saharan Africa’s most fundamental challenges for improved human development, and further, that it is culturally revered when one is overweight (round) in the Africa setting as this is always seen as a sign of wealth and prestige.<sup>28</sup> However, a PA and nutrition transition, as a result of urbanization, is contributing to unhealthy lifestyles in Kenya. These findings emphasize a need for the generation of nationally-representative estimates for the body weights of school aged children and youth.

## Strengths and Limitations

It is worth noting that the Kenyan 2016 Report Card relied mainly on a comprehensive review of the most recent available data to inform the core indicators. This is a major strength of the report. Further, the multidisciplinary nature of the report card working group drawn from different institutions in the country was another strength of the report.

A major limitation of this study was the lack of nationally representative data and the different methodologies used in the studies. There is need for more studies with larger and more representative samples from around the country including both urban and rural populations.

## Conclusions

Kenya's 2016 Report Card on Physical Activity for Children and Youth shows that the majority of Kenyan children and youth are physically active with a healthy body weight; however, there is need for more concerted efforts in the areas where Kenya is not doing well, especially in relation to implementation of government policies, familial and peer support, as well as the community and the built environment. Although Kenya is doing well compared with developed countries, there is need for a multisectoral approach to address the emerging trends toward unhealthy lifestyles especially in the face of a devolved system of governance, rapid urbanization and the emerging PA transition.<sup>29–32</sup>

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