

Physical activity in youth during COVID-19 pandemic

Soroor Arman M.D

Professor of Child Psychiatry

Isfahan University of Medical Sciences(IUMS)

Quality of life

Quality of life is defined by the World Health Organization as "an individual's perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns".

Standard indicators of the quality of life include wealth, employment, the environment, physical and mental health, education, recreation and leisure time, social belonging, religious beliefs, safety, security and freedom.

Quality of life in children

In health care, quality of life is viewed as multidimensional composed of :

- emotional well-being
- physical well-being
- social well-being

Three articles by Nobari et al (2021) revealed that COVID-19 pandemic had a significant impact in QoL in children. A reduced quality of life was assessed in both boys and girls.

Physical activity

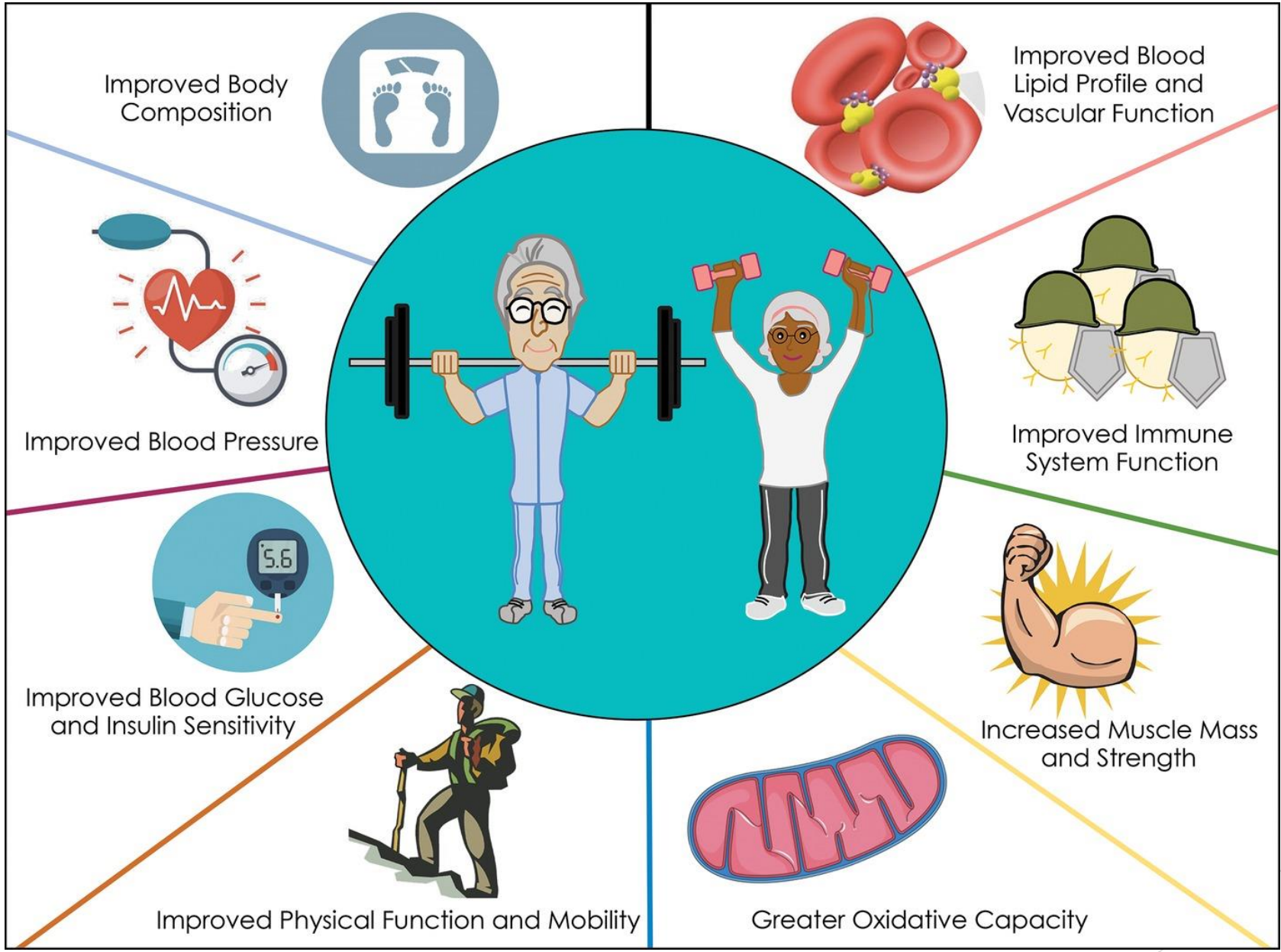
Regular physical activity can greatly contribute to the improvement of physical fitness and performance.

As well as the physical benefits, exercise can help improve quality of sleep, energy and mental health and reduces the risk of developing mental illness and eases symptoms. This includes depression, anxiety, Post-Traumatic Stress Disorder (PTSD), panic disorder, and Attention-Deficit/Hyperactivity Disorder (ADHD)...

Amount of Physical Activity required for individuals depend on different factors including: age, health and choice of workouts.

WHO recommends an average of 60 minutes per day of moderate-to-vigorous intensity, mostly aerobic, physical activity across the week for children and young adults. Vigorous-intensity aerobic activities, as well as those that strengthen muscles and bones should be incorporated at least 3 days a week.

According to this criteria individuals can be classified as : Hyperactive, Hypoactive and Normal active.



Physical Activity and Learning

Physical Activity:

- improve alertness, attention and motivation
- prepares and encourages nerve cells to bind to one another, which is the cellular basis for logging in new information
- it spurs the development of new nerve cells from stem cells in the hippocampus
- not only does exercise help the brain get ready to learn but it also makes retaining information easier.

Effect of Physical Activity on learning Mathematics

Recent studies show that PA may have an affect on executive functions. Executive functions (inhibition, working memory and cognitive flexibility) have been found to be associated with improvement in both reading and mathematics.

Several intervention studies have indicated that PA during the school day is positively associated with increased attention and time-on-task.

In five studies, the intervention consisted of extra PE lessons and more intense PE lessons during the school day, three out of five interventions showed positive results on mathematics performance while one study reported partly positive and partly neutral results and one of the studies reported neutral effects.

(Reference: International Journal of Behavioral Nutrition and Physical Activity)



COVID-19 and Physical activity in youth

Spread of Corona virus and closure of schools and gyms, and cancellation of youth sports and activity classes inhibited individuals from achieving recommended levels of physical activity.

This led to an increased risk of obesity, diabetes, and cardiovascular diseases in children.

Although without the structure of school or demands of after-school lessons and classes, some children may have more time for physically active free play at home, many do not have access to these opportunities based on household financial considerations, digital technology access to online programs, house and yard size and neighborhood safety.

Sedentary behavior during COVID-19 restrictions

During COVID-19 restrictions, children and teens ages 6-17 years old are spending alarming number of hours sitting whether it's using the internet, emailing ,doing school-related video calls, doing school-related work or during their free time while they are playing video games, watching television or movies, being on their phone or reading books.

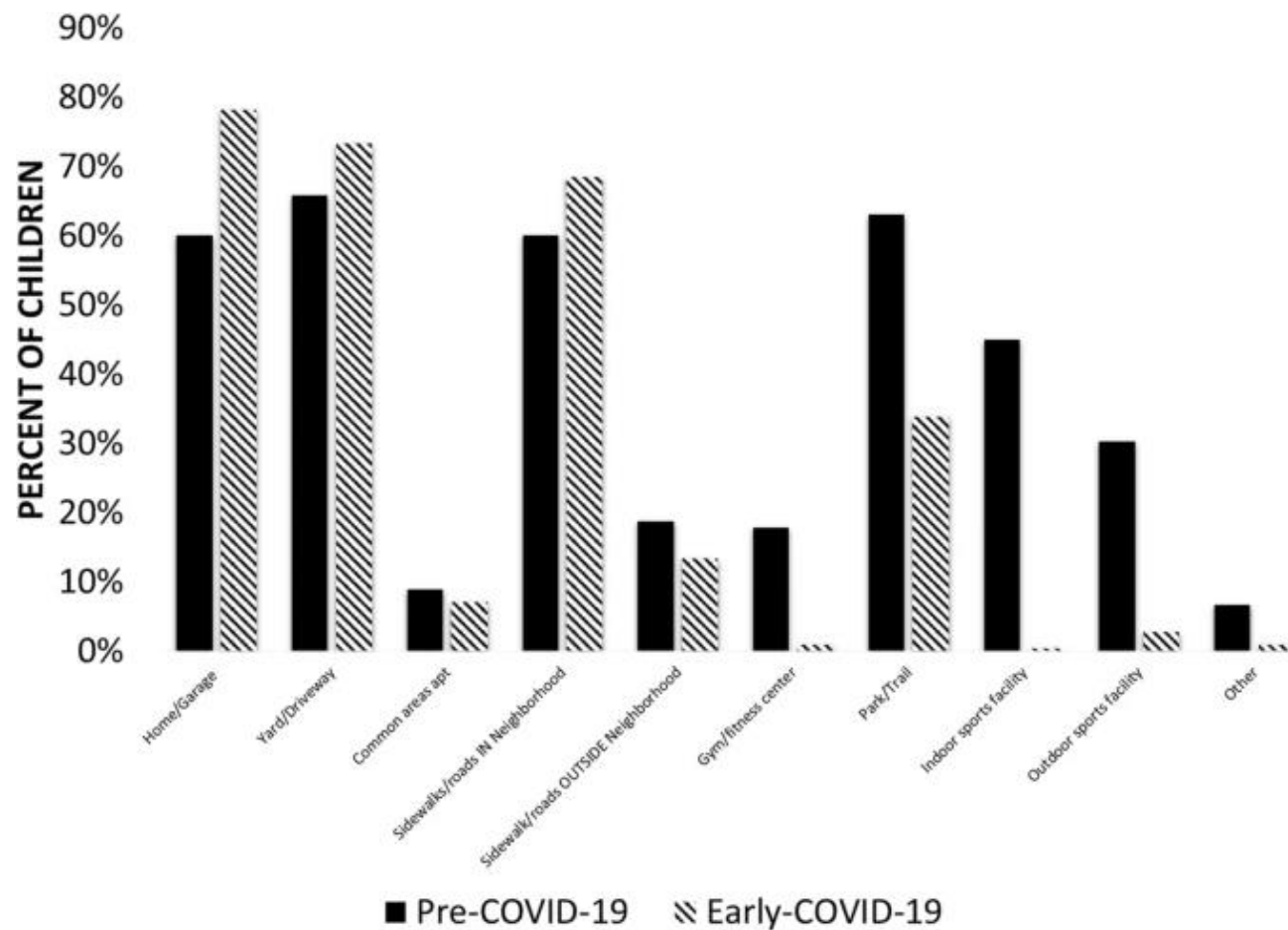
If COVID-19 school closures and sport team/activity class cancellations lasting a year or more result in inactivity patterns that are typically seen on weekends and during the summer, there may be enormous consequences for children's overall physical and mental health.



According to a research done by BMC public health on children living in US, the most frequently reported physical activities during COVID-19 pandemic were free play/unstructured PA (e.g running around) and going for a walk.

Boys were more likely to participate in sports practice/training than girls. Additionally, younger children (ages 5-8) were more likely to participate in free play/unstructured physical activity (biking/roller skating etc.) than older children (ages 9-13).

Unadjusted percentages of children whose parents reported that they performed physical activity in each location during the pre-COVID-period (February 2020) and early-COVID-19 period (April-May 2020). n = 187



Searching for a solution

In order to avoid permanent changes in behavior extending beyond the duration of the COVID-19 closures, measures must be taken to promote home and neighborhood-based PA during children's leisure time.

Parents also have a major role in holding their children accountable and setting rules to decrease their screen time and encourage them to choose a hobby that allows them to reach their recommended amount of weekly physical activity.

How to get started

1. Set achievable goals
2. Incorporate physical activity in daily life (e.g. take the stairs instead of using the elevator, walk to the store).
3. Find positive role models
4. Search for physical activity you enjoy
5. Create a routine and make it into a habit



**Welcome to HPI – the Healthy Populations Institute
at Dalhousie University.**

