

Editorial

# Physical Activity and Sports Practice in Children and Adolescents at the Time of the COVID-19 Pandemic: Hypothetical Future Scenarios and Preventive Practical Applications

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**Abstract:** As a logical and direct consequence of the closure of schools and sports facilities, an expected reduction in the practice of physical activity (PA) and sports has been detected in both children and adolescents all over the world. Hence, we analysed the short-term and long-term consequences of the lack/low level of PA and sports activity in this population, which we referred to as primary and secondary risks, respectively, the latter of which have to be considered in hypothetical future scenarios.

**Keywords:** COVID-19; coronavirus; physical activity; sport; children; adolescents



**Citation:** Battaglia, G.; Palma, A. Physical Activity and Sports Practice in Children and Adolescents at the Time of the COVID-19 Pandemic: Hypothetical Future Scenarios and Preventive Practical Applications. *Sustainability* **2021**, *13*, 13787. <https://doi.org/10.3390/su132413787>

Received: 30 November 2021

Accepted: 8 December 2021

Published: 14 December 2021

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## 1. Introduction

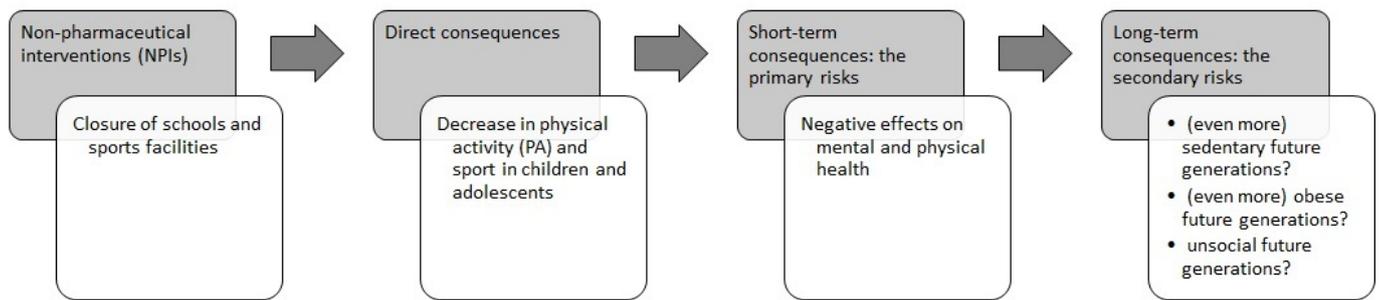
Since December 2019, humanity has been affected by a severe acute respiratory syndrome with unknown origin, caused by a novel coronavirus named SARS-CoV-2, the coronavirus disease-2019 (COVID-19) [1]. Due to rapid worldwide transmission, the World Health Organisation (WHO) declared the COVID-19 a global pandemic in March 2020 [2].

In order to contain the spread of the virus and prevent the contagion, the governments of each country have adopted restrictive and precautionary measures known as non-pharmaceutical interventions (NPIs), forcing humans to change their lifestyle [3–5], and therewith scientists have developed models to predict the effectiveness of different NPIs [6]. Among the NPIs, a significant impact on society has been given by the closure of schools and sports facilities, in an attempt to keep people at home as much as possible [7–10]. As a logical and direct consequence, an expected reduction in the practice of physical activity (PA) and sports has been detected in both children and adolescents all over the world [11,12].

## 2. Impact of COVID-19 on PA and Sports Activity: Short- and Long-Term Consequences

The decrease in PA/sports practice and the increase in sedentary behaviour, as has been occurring since the onset of the pandemic to date, represents a critical issue for the population and particularly alarming for children and adolescents [13]. In fact, the fundamental role of PA and sports in numerous aspects related to mental and physical health during development is widely recognised [11].

Due to the current context, the lack/low level of PA and sports activity can lead to serious short- and long-term consequences, which we referred to as primary and secondary risks, respectively (Figure 1). Although the primary risks have been extensively investigated, the secondary risks have to be considered in hypothetical future scenarios.



**Figure 1.** From the closure of schools and sports facilities to hypothetical future scenarios.

### 3. Short-Term Consequences: The Primary Risks

The lack of physical education and after-school sports activities can lead to early negative effects on both mental and physical health in children and adolescents [11,14,15].

Regarding the mental sphere, recent findings have shown an increase in anxiety and depression in adolescent athletes [15], as well as suicide behaviours linked to the COVID-19 pandemic [16]. Other psychosocial manifestations such as distress, impatience, annoyance, and lack of social interactions may be related to the closure of schools and the lack of PA due to the current pandemic [14].

As regards the physical characteristics, the main short-term consequence of the lack/low level of PA and sports activity is linked to the risk of overweight and obesity, accompanied by a reduction in lean body mass [17]. This is also due to the fact that children with a sedentary lifestyle engage in harmful behaviour (for example, eating unhealthy foods) [18].

### 4. Long-Term Consequences: The Secondary Risks—What Hypothetical Future Scenarios?

#### 4.1. Sedentary Behaviour

Although there are differences between genders and countries, the increase in sedentary behaviour and insufficient levels of PA represent a global prevalence in all ages, including children and adolescents, with a rate of 81% of adolescents aged between 11 and 17 years [13,19]. To counteract this serious health problem, the WHO has recently developed guidelines on physical activity and sedentary behaviour for children and adolescents providing recommendations concerning the type of physical activity and the associated parameters (i.e., intensities, frequencies, and durations) [20].

As health behavioural patterns (such as physical inactivity and sedentary behaviour) adopted during the developmental age appear to persist throughout life [21], in this protracted pandemic-related context, do we risk having (even more) sedentary future generations?

#### 4.2. Overweight and Obesity

It is now known that the rates of overweight and obesity in childhood are constantly increasing and the practice of PA and sports can counteract this critical health problem. Moreover, it plays a fundamental role in preventing the development of overweight and obesity in adulthood [22–24]. Evidence suggests that even during the summer recess, when schools are closed, children gain unhealthy body weight [25]. Due to the current situation in which opportunities for PA and sports activity among children have declined over a long period, do we risk having (even more) obese future generations?

#### 4.3. Social Interactions

The practice of PA and sports has beneficial effects on psychophysical characteristics and also positively influences the social domain. Social benefits, such as self-esteem and life satisfaction, in children and adolescents through participation in PA and sports are well documented [26]. Since the NPIs, such as the closure of schools and sports facilities, have

reduced the habitual PA and sports practice and the related social interactions, do we risk having unsocial future generations?

### 5. Preventive Practical Applications

To cope with the current emergency in terms of diminished levels of curricular and extracurricular PA and sports practice, adapted strategies should be adopted. Among the latter, we strongly recommend home-based exercise using communication platforms for videoconferencing by physical education teachers, sports technicians, and trainers in order to maintain an active lifestyle during the COVID-19 pandemic. Additionally, other social media platforms could be used to propose physical challenges in short-form videos. More recently, apps for mobile devices have been developed for practicing physical activity from home [27]. The latter mode, even if it does not allow a constant and direct control by a trainer, can still be useful support for the general population owing to the fact that it is possible to adjust the intensity according to one's sports background [27]. Furthermore, where possible, it is suggested to organise periodic outdoor activities in compliance with the NPIs, such as maintaining social distancing, in the hope of being able to return to normal sports and physical activity.

**Funding:** This research received no external funding.

**Acknowledgments:** The authors wish to thank Valerio Giustino for his kind collaboration in this editorial.

**Conflicts of Interest:** The authors declare no conflict of interest.

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