Returning Chinese school-aged children and adolescents to physical activity in the wake of COVID-19

Actions and precautions

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The Coronavirus disease (COVID-19) pandemic is still spreading globally. As of April 7, 2020, it has reached 184 countries and territories, infecting more than 1.4 million people worldwide with more than 82,000 deaths. The situation in China has improved significantly since December 31, 2019. Owing to the unprecedented and effective quarantine measures taken across the country, Chinese health authorities reported on March 18, 2020, that for the first time since the outbreak no new locally transmitted COVID-19 cases had been reported, marking a major turning point in the fight against the highly contagious coronavirus. Since then, the daily number of new cases in the mainland of China has dropped to double digits, with new infections primarily originating from incoming air passengers from outside China.

With the easing of the COVID-19 public health emergency in China, many of the stringent measures implemented during the crisis are gradually being relaxed, and the country is cautiously and methodically preparing to begin a post-pandemic return to normality. As part of the effort to restore societal activities suspended due to the virus outbreak, hundreds of thousands of primary, secondary, and high schools across the country, closed in January in an effort to curb the spread of COVID-19, have begun to reopen and resume their regular academic and physical education curricula, especially in low-risk regions (i.e., in communities free of the disease).

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Months of closures and community-wide lockdowns have inevitably disrupted the routine physical activities of tens of millions of students in China. Therefore, as schools begin to come back into service, there is a public health need to ensure that all Chinese children and youth effectively move past the imposed restrictions that limited exercise by participating in the recommended levels of physical activity during the school day, including the time they spend being active in physical education classes. In addition, resuming regular physical activities may also help students recuperate from the stress and anxiety they experienced while in quarantine during the COVID-19 crisis.

1. Physical activity guidelines

Current guidelines on physical activity for children and adolescents aged 5—17 years generally recommend at least 60 min daily of the following moderate- to vigorous-intensity physical activities:

- **Aerobic activities**: Most of the daily activities should be moderate- to vigorous-intensity aerobic activities, such as bicycling, playing sports and active games, and brisk walking.
- **Strength training**: The program should include muscle-strengthening activities at least 3 days a week, such as performing calisthenics, weight-bearing activities, and weight training.
- **Bone strengthening**: Bone-strengthening activities should also be included at least 3 days a week, such as jumping rope, playing tennis or badminton, and engaging in other hopping-type activities.

It is well-established that physical inactivity leads to the development of chronic diseases and, given the past 2—3
months of social lockdown in China, a rise in sedentary behaviors should be anticipated, with a subsequent negative impact on the health- and fitness-related outcomes of Chinese children and adolescents. Therefore, urgent actions are needed to normalize and restore physical activity among this population. Restoration of daily physical and sport activities should be progressive, beginning with short bouts of activities that are most appealing to children and youth and gradually increasing the number of days and the amount of participation time so that it is eventually sufficient to meet the guidelines while minimizing the risk of injury after the enforced layoff.10

2. Precautions

For public health reasons, staying active and healthy during the coronavirus pandemic has been important, and remains so now in China, where the severity of the outbreak seems to be subsiding. However, as the number of cases, deaths, and affected countries continues to rise, COVID-19 is clearly still a serious public health threat across the globe. Concerns remain about a second wave of the virus that might be triggered by cases involving travelers, many of whom are Chinese students returning after being in infected areas overseas. Therefore, the continued implementation of measures necessary for preventing the re-introduction of COVID-19 and protecting the health of Chinese children and youth as they return to the school environment remains critical.

In light of these public health concerns, the World Health Organization (WHO), Chinese Center for Disease Control and Prevention, Ministry of Education of the People’s Republic of China, and others continue to emphasize the importance of preventing and controlling coronavirus and the steps that schools and parents should take to help protect children and adolescents as they resume their regular school schedules. Here, we outline several of these standard day-to-day precautions related specifically to physical activity among school-aged children and adolescents.

3. What should school administrators and physical educators do?

- Stay informed of updates from WHO and from national and local school and health authorities on the latest developments related to COVID-19. These include recommended public health responses and guidelines for controlling and preventing the spread of the virus.
- Encourage proper social distancing on campus (i.e., the WHO recommends maintaining at least 1 m distance between students and between school staff, and anyone who is coughing or sneezing).
- Implement recommended protective measures, including performing daily health checks, wearing masks, conducting temperature checks, and providing designated routes to classrooms.
- Avoid crowds and large gatherings within and near school boundaries, including school entrances, playgrounds, and classrooms.
- Implement physical education or physical activity classes with staggered time tables to avoid crowding.
- Make hand-washing or hand sanitizer stations available and easily accessible in all classrooms, restrooms, playgrounds, track fields, and school buses.
- Sanitize all surfaces and equipment regularly at the school, including sports facilities and equipment.
- Restrict physical activities that involve body contact and the sharing of sports equipment, as well as water bottles. Choose drills and exercises that encourage social distancing. Avoid sport activities involving body contact between students or contact with shared equipment (e.g., balls), especially when resuming physical activity programs.
- Contact the student’s parents immediately if a student experiences any abnormal respiratory symptoms. Isolate the student and anyone who may have been exposed to the virus.
- Plan physical activities that accommodate children with special healthcare needs, including children who have chronic illnesses (such as asthma, diabetes, cancer, or heart disease) or immune or neuromuscular problems. Avoid continuous vigorous activity for these children.
- Create innovative teaching strategies as needed, including Internet-based, virtual delivery of classes in order to minimize direct student-to-student and student-to-teacher contact.

4. What should parents do?

- Practice good respiratory hygiene with children both at home and at school (e.g., covering the mouth and nose when coughing and sneezing, as well as washing hands frequently for at least 20 s).
- Encourage children not to touch their eyes, nose, and mouth with unwashed hands.
- Discourage children from shaking hands with their close friends and relatives.
- Encourage children to practice social distancing when playing sports or engaging in physical activities in the home environment or neighborhood.
- Monitor children closely for any flu-like symptoms and contact a healthcare provider immediately if any suspected respiratory illness is noted.
- Frequently sanitize sport or exercise equipment kept in the home.
- Stay active with children at home by engaging in moderate-intensity activities such as active exercise games, sports, and walking, while maintaining the recommended social distancing from neighbors and each other.
- Ensure that children get adequate sleep. Per current guidelines, children aged 5–13 years should have 9–11 h of uninterrupted sleep per night and those aged 14–17 years should have 8–10 h of uninterrupted sleep per night.

5. Conclusion

While these general recommendations focus on physical activity and health guidelines in China as the COVID-19 subsides, they are relevant for all countries globally. Participating in daily physical activity is known to facilitate healthy
development in school-aged children and adolescents and is important for achieving the goals of Healthy China 2030, which include the prevention of the early onset of chronic diseases among Chinese citizens. As COVID-19 continues to spread globally, it is imperative that all school administrators, teachers, and parents remain vigilant and mindful of the recommended infection prevention and control measures as students return to normal life and resume their daily sports and physical activities.

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Authors’ contributions

PC and FL were responsible for the overall concept and content of this opinion article and writing the first draft of the manuscript. All authors were involved in the literature search, data interpretation, and writing, editing, and critical revision of multiple versions of the manuscript. All authors have read and approved the final version of the manuscript, and agree with the order of presentation of the authors.

Competing interest

The authors declare that they have no competing interests.

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