Commentary

2020 WHO guidelines on physical activity and sedentary behavior

ABSTRACT
The World Health Organization released new guidelines on physical activity and sedentary behaviour in November 2020. This commentary summarises these guidelines, including the new elements. An evaluation of the guidelines for each specific sub-population is provided. Finally, as the author group includes physical activity researchers from four continents, we provide recommendations on how to support the implementation of the new guidelines.

In 2020 the World Health Organization (WHO) released new guidelines on physical activity and sedentary behaviour for children and adolescents, adults, and older adults.1 Guidelines are an important tool for policymakers to promote healthy levels of these behaviours. For the public, they provide evidence-based guidance on how much time should be spent in these behaviours, how often, and at what intensity to promote health. Although many countries have their own guidelines on these behaviours, guidelines from the WHO are important to draw attention globally to the importance of these behaviours and to provide guidance for those countries that do not have the resources to develop their own guidelines.

The Guidelines are designed for any stakeholder with an interest in understanding and advocating for the importance of healthy levels of physical activity and sedentary behaviour. The 2020 guidelines replace the 2010 WHO Global recommendations on physical activity for health.2 For the first time, the 2020 guidelines contain specific recommendations for pregnant and postpartum women, adults and older adults with chronic conditions, children and adolescents living with disability, and adults living with disabilities. A summary of the main recommendations for each sub-population appears in Table 1. The WHO Guidelines are the most recent addition to a triumvirate of resources from the WHO that includes the Global Action Plan for Physical Activity (GAPPA)3 and ACTIVE technical package.4

A welcome addition in the Guidelines is a recommendation for sedentary behaviours for each subpopulation (see Table 1). This addition was based on extensive reviews of the growing body of research examining associations between sedentary behaviours and health outcomes. Essentially, the 2020 guidelines recommend individuals across ages, with or without specific health conditions, to limit the amount of time spent being sedentary. In particular, recreational screen time was highlighted as a potential source of sedentary behaviour that should be avoided in children with or without disabilities. Adults, by contrast, are recommended to replace sedentary time with activities of other intensities. Further, adults are suggested to do more moderate-to-vigorous forms of physical activity to reduce the negative effects of sedentary behaviours, if these were unavoidable.

Given there is increasing evidence to support the potentially detrimental effects of long durations of sedentary behaviours on health outcomes, the inclusion of recommendations regarding these behaviours should be welcomed by many health practitioners and researchers. The change may encourage more government bodies to incorporate sedentary behaviour recommendations into national guidelines. Additional research in this area may also be galvanised. Nonetheless, individuals who are less knowledgeable about this research area may wish to have more discrete recommendations on total sedentary durations, or on the number or the lengths of sedentary bouts. The presence of such guidelines may seem attractive, yet the Guideline Development Group adjudged that there was insufficient research evidence to provide guidelines at this level of specificity. On practical levels, one can envision that these types of behaviours are related to a multitude of factors such as age, schooling, type of work undertaken, and other barriers that may appear to be uncontrollable to individuals. Given the diverse nature of sedentary behaviours, a “one-size-fits-all” approach may be inappropriate. However, we can expect more research evidence to be available before the release of the next edition of the WHO guidelines.

Having specific recommendations for pregnant and postpartum women is important as it states the need for physical activity and helps to overcome long-standing perceptions about the potential detrimental impact of maternal physical activity on the foetus and on the delivery process. From the position of evidence-based medicine, it has been demonstrated that physical activity during the pregnant and postpartum periods is associated with positive health-related outcomes such as reduced gestational weight gain and reduced risk of gestational diabetes. Physical activity does not increase the risk of gestational hypertension and preeclampsia and is not associated with an increased incidence of miscarriage, stillbirth or delivery complications or any adverse effects on birth weight or preterm birth. Having a strong and clear recommendation on physical activity for pregnant and postpartum women without contraindications, and with clear safety considerations, is important. These safety considerations are another strength of the Guidelines as they are appropriately detailed and formulated and provide clear guidance for actions and decision-making.

Adults and older adults with chronic conditions represent a substantial segment of society. Specific guidelines for these sub-populations...
is important for promoting physical activity and demonstrating its evidence-based impact on health-related outcomes. The recommendations for adults and older adults with chronic conditions focuses on four groups: cancer survivors, people living with hypertension, people living with type-2 diabetes and people living with HIV. This is a significant number of people. More than 4 billion live with elevated systolic blood pressure and it is a leading risk factor for death and disability adjusted life years (DALY). The annual incidence rate for cancer is 24.5 million with a substantial number of these cases surviving each year. Thirty-eight million people live with HIV. A review of available evidence demonstrates clear positive impacts from physical activity for these groups: for cancer survivors, it is a decreased risk of all-cause, cause-specific and cancer-specific mortality; in HIV patients physical activity was associated with a slowing of progression of the virus and improved cardiorespiratory fitness.

Including specific recommendations for these sub-populations is important and sends a clear message that chronic conditions are not a barrier to participating in physical activity; moreover, for people living with the four listed conditions, the same levels of physical activity as healthy adults are recommended, with some precautions. It is important to note that a medical clearance is generally unnecessary for individuals without contraindications. This simplifies the decision to start participating in and maintaining physical activity. However, it is advised that individuals consult a relevant healthcare professional if seeking advice on the types and amounts of physical activity appropriate for them.

Although the above chronic conditions were specifically highlighted based on the strength of evidence of their association with physical activity, other non-communicable diseases such as coronary heart disease and chronic respiratory diseases should be included. This is important given the number of patients globally with cardiovascular diseases, not including hypertension, is 523 million. Ischemic heart disease and chronic obstructive pulmonary disease (COPD) are leading causes of disease burden worldwide. Further, the number of patients with chronic respiratory diseases is estimated to be 545 million. Chronic conditions can include infection and post-infection states other than the human immunodeficiency virus (HIV). The significant number of people globally who have been infected with COVID-19 may likely lead to an increase in the global prevalence of chronic conditions. Previous pandemics of coronavirus infections have shown that two years after the infection, impairment on physical capacity persisted and that 40% of individuals had symptoms of chronic fatigue. Moreover, 40% had psychiatric comorbidities 3.5 years after the initial diagnosis. A three-month follow up of COVID-19 patients showed that 78% of the sample showed poor performances in at least one cognitive domain, with executive functions and psychomotor coordination being impaired in 50% and 57% of the sample, respectively.

It would be useful to have clearer specifications for those with chronic conditions who do not have contraindications to physical activity. Without this, the message that pre-exercise medical clearance is generally unnecessary for people without contraindications prior to beginning activity that is no more intense than a brisk walk may be confounded. This would be the case where there is uncertainty in the category of those who have no contraindications. For example, the group of chronic conditions listed is quite diverse (hypertension and HIV for example will have quite different contraindications).

Over one billion people live with disability and have not been regularly included in recommendations for healthy lifestyles. These people have a right to equal participation in all activities in society. It is pleasing that the new WHO Physical Activity and Sedentary Behaviour Guidelines has a specific recommendation for people living with disability.
There are a number of recommendations for supporting the implementation of the guidelines. These are captured in Box 1. In addition, we would like to propose one more. That is, for more evidence for all sub-populations and guidelines from low- and middle-income countries. Without such evidence, our guidelines are largely based on evidence from a very small number of English-speaking high-income countries. This is not representative of the global population who undertake their physical activity and sedentary behaviour differently, which may vary associations with health, and which may result in different factors that need to be targeted to promote healthier levels of physical activity and sedentary behaviour.

**Submission statement**

We confirm that this work is original and has not been published elsewhere, nor is currently under consideration for publication elsewhere.

**Authors’ contributions**

ADO drafted the outline and each co-author completed specific sections. All authors contributed equally to the Box 1 recommendations.

**Conflict of interest**

ADO was a member of the Guideline Development Group for the WHO Guidelines for physical activity, sedentary behaviour and sleep for children less than five years. ADO was also a member of the Guideline Development Group for the Australian and for the Canadian 24-h movement guidelines for children and young people.

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