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Correspondence and Replies

COVID-19 pandemic and home-based physical activity



To the Editor:

The article by Nyenhuis et al¹ is very interesting and adds important information about exercise and social distancing during the coronavirus disease 2019 pandemic. Social isolation/distancing (“stay home”) can increase sedentary behavior and decrease the level of physical activity, which has already been linked to poor survival rates.²

Conceptually, exercise training is a structured physical activity for a specific purpose, such as a training to gain lower limbs strength and decrease the risk of falls in old people. Thus, although exercise training provides important benefits, as shown by Nyenhuis et al,¹ it needs a proper prescription to be safely and efficiently performed, even at home. Physical activity, on the other hand, is “any bodily movement produced by skeletal muscles that results in energy expenditure”³ above 1.5 metabolic equivalent (MET), such as walking to work or performing household chores. It is known that 1 MET is equivalent to resting metabolism, or 1 kcal/kg/h or 3.5 mL/kg/min of oxygen consumption (general numbers).

In this sense, understanding home-based physical activity, and not just exercise training, is relevant to keep ourselves healthy. This text also shows that adults may be already in accordance with World Health Organization (WHO) recommendations for physical activity (150 minutes of moderate-intensity physical activity, 75 minutes of vigorous-intensity physical activity, or an equivalent combination of them per week).⁴

Let us consider 3 major variables (Table I): type of activity (cleaning the floor, for example), intensity (how much this activity tires and expends energy), and duration (for how long this activity is carried out). In general, the intensity of physical activity can be classified as light (<3 METs), moderate (3-5.9 METs), or vigorous (>6 METs).⁶ Example 1: John (random name), 30 years old, 60 kg, has 2 children. During his morning activities, he gets up early and prepares breakfast (3.5 METs) for approximately 20 minutes.⁵ Then, he cleans the floor (3.8 METs) for 10 minutes, and then takes 15 minutes to bathe the children (3 METs).⁵ Thus, taking into account that cooking, cleaning the floor, and bathing the children are moderate-intensity physical activities (>3 METs), John, that morning, reached more than 30 minutes of moderate-intensity physical activity and he is in agreement with WHO

TABLE I. Suggestions for home-based physical activity and respective intensities⁵

Daily activities	METs	Estimated VO ₂ (mL/kg/min)	Average time (min)
Resting	1	3.5	1
Home activity			
Sweep the floor	3.8	13.3	10
Wash dishes	2.5	8.75	8
Washing clothes by hand	4	14	15
Ironing	1.8	6.3	10
Cooking or food preparation	3.5	12.25	20
Child care, standing	3	10.5	15
Standing, bathing dog	3.5	12.25	15
Playing with child(ren)	5.8	20.3	15
Playing with animals	2.8	9.8	15
Shaving, brushing teeth	2	7	5
Bathing	1.5	5.25	10
Increase self-care			
Hairstyling, standing	2.5	8.75	5
Putting on make-up	2	7	5
Dance and sing songs you like			
General dancing	7.8	27.3	15
Playing musical instruments	2	7	20
Using or climbing up ladder	8	28	15
Activities especially for those who live in a house			
Gardening			
Watering lawn or garden	1.5	5.25	5
Mowing lawn	6	21	15
Gardening, using containers, older adults >60 y	2.3	8.05	10
Wash car	3.5	12.25	15
Home repair, general	4.5	15.75	15
Painting—wallpapering	4.5	15.75	20

VO₂, Oxygen uptake.

recommendations.⁴ Example 2: John, the next day, bathed the dog (3.5 METs) for 15 minutes, then danced (7.8 METs) and sang with his children for 20 minutes the songs they liked most, and after a break decided to paint (4.5 METs) the walls of the room for about 20 minutes.⁵ Thus, we observed that John made a moderate-intensity (>3 METs) to vigorous-intensity (>5.9 METs) effort in just 55 minutes. Thus, it complied with WHO recommendations.⁴

In conclusion, when staying home is a necessity during the coronavirus disease 2019 pandemic, it is still possible to meet the WHO recommendations for physical activity. We should avoid high sedentary behavior and look at domestic activities as an opportunity to stay healthy.

Vitor Oliveira Carvalho, PhD
Caroline Oliveira Gois, PT

Postgraduate Program in Health Sciences (The GrEAt Group - Grupo de Estudo em Atividade física), Department of Physical Therapy, Federal University of Sergipe (UFS), Sao Cristovao, Sergipe, Brazil.

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Corresponding author: Vitor Oliveira Carvalho, PhD, Federal University of Sergipe (Universidade Federal de Sergipe - UFS), Postgraduate Program in Health Science, Department of Physical Therapy, Av. Marechal Rondon, s/n - Jardim Rosa Elze, São Cristóvão - SE, Sergipe, Brazil 49100-000. E-mail: vitor.ufs@gmail.com.

REFERENCES

- Nyenhuis SM, Greiwe J, Zeiger JS, Nanda A, Cooke A. Exercise and fitness in the age of social distancing during the COVID-19 pandemic. *J Allergy Clin Immunol Pract* 2020;8:2152-5.
- Ekelund U, Brown WJ, Steene-Johannessen J, Fagerland MW, Owen N, Powell KE, et al. Do the associations of sedentary behaviour with cardiovascular disease mortality and cancer mortality differ by physical activity level? A systematic review and harmonised meta-analysis of data from 850 060 participants. *Br J Sports Med* 2019;53:886-94.
- Caspersen CJ, Powell KE, Christenson GM. Physical activity, exercise, and physical fitness: definitions and distinctions for health-related research. *Public Health Rep* 1985;100:126-31.
- World Health Organization. WHO | World Health Organization. 2020. Available from: <https://www.who.int/news-room/fact-sheets/detail/physical-activity>. Accessed May 4, 2020.
- Arizona State University, Healthy Lifestyles Research Center, School of Nutrition and Health Promotion. Compendium of Physical Activities. Available from: <https://sites.google.com/site/compendiumofphysicalactivities/home>. Accessed May 4, 2020.
- Ainsworth BE, Haskell WL, Herrmann SD, Meckes N, Bassett DR Jr, Tudor-Locke C, et al. 2011 Compendium of Physical Activities: a second update of codes and MET values. *Med Sci Sports Exerc* 2011;43:1575-81.

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Reply to "COVID-19 pandemic and home-based physical activity"



To the Editor:

Carvalho and Gois¹ make a salient point about home-based physical activity during the coronavirus disease 2019 pandemic, and we agree that any type of physical activity can help promote wellness and alleviate stress. We appreciate the details the authors provide in their correspondence, and we have added the following sentence to our article, which was in the proof stage when we received the correspondence: "Physical activity intensity is expressed as metabolic equivalent of task. While a person can accumulate metabolic equivalent of task through tasks of daily living and that can help meet the recommended amount of physical

activity per week, the focus of this editorial is on leisure time physical activity. We are offering recommendations on how to broaden the ability to reach physical activity standards and that might offer an antidote to the tedium and help mental health during the COVID-19 pandemic. We also hope, for those who are new to leisure time physical activity, new habits will be formed that can be implemented once shelter in place orders are lifted."

Sharmilee M. Nyenhuis, MD, FAAAAI^{a,b}
Justin Greiwe, MD^{c,d}
Joanna S. Zeiger, MS, PhD^e
Anil Nanda, MD^{f,g}
Andrew Cooke, MD^h

^aDivision of Pulmonary, Critical Care, Sleep and Allergy, Department of Medicine, University of Illinois at Chicago, Chicago, Ill

^bCenter for Dissemination and Implementation Science, Department of Medicine, University of Illinois at Chicago, Chicago, Ill

^cDivision of Immunology/Allergy Section, Department of Internal Medicine, The University of Cincinnati College of Medicine, Cincinnati, Ohio

^dBernstein Allergy Group, Inc, Cincinnati, Ohio

^eRace Ready Coaching, Boulder, Colo

^fAsthma and Allergy Center, Lewisville and Flower Mound, Texas

^gDivision of Allergy and Immunology, University of Texas Southwestern Medical Center, Dallas, Texas

^hLake Allergy, Asthma and Immunology, Tavares, Fla.

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Corresponding author: Sharmilee M. Nyenhuis, MD, FAAAAI, 840 S. Wood St, MC 719, Chicago, IL 60601. E-mail: snyenhui@uic.edu.

REFERENCE

- Carvalho VO, Gois CO. COVID-19 pandemic and home-based physical activity. *J Allergy Clin Immunol Pract* 2020;8:2833-4.

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Challenges to pediatric services during COVID-19 pandemic: A London, UK perspective



To the Editor:

Bansal et al's paper¹ on clinician wellness is a welcome addition to the growing canon highlighting the importance of maintaining a psychologically healthy workforce. We identify with the COVID-19 challenges to wellness, including the new anxiety around staff mortality that the article highlights so well, and wish to provide a pediatric trainee perspective regarding the adjustments that have been made thus far to mitigate some significant changes to service provision and training.

In the north London pediatric network to which we belong, we have witnessed an unprecedented reconfiguration of pediatric services, with the temporary closure of 2 pediatric emergency departments and 5 inpatient pediatric wards. Although this has enabled the crucial redeployment of nursing and medical colleagues to areas of highest need, with up to 10% of the pediatric medical workforce unable to work due to sickness or self-isolation,² there has been a striking diminution of the familiar teams we once worked alongside. Still, adversity often breeds creativity and the challenges faced have proffered new avenues. Our service has rapidly adapted to telemedicine clinics, and clinicians shielding due to heightened vulnerability to COVID-19 have been reassigned to this alternative model. The trainee rota has been rationalized, with strategic adjustments made to reduce the risk of burnout. The rapid creation of new