



Physical activity for cancer patients during COVID-19 pandemic: a call to action

Leandro F. M. Rezende¹ · Dong Hoon Lee² · Gerson Ferrari³ · José Eluf-Neto⁴ · Edward L. Giovannucci^{2,5,6}

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Abstract

Self-isolation is strongly recommended for cancer patients during the COVID-19 pandemic, but may lead to physical inactivity and prolonged sitting time. The benefits of physical activity for cancer patients are manifold, such as reduced anxiety, fewer depressive symptoms, less fatigue, better quality of life, and improved physical function. In the last decade, several oncology-related organizations have provided guidance and summarized the evidence on the role of physical activity for cancer survivors. In this comment, we provide a brief summary of these recommendations and benefits of physical activity for cancer patients; and we recommend that oncologists and health practitioners should promote an active lifestyle for these patients during the pandemic and thereafter. Suggestions for implementing these actions in the clinical settings are also provided.

Keywords Physical activity · Exercise · Covid-19 · Cancer patients · Cancer survivors

Main

The coronavirus disease (COVID-19) pandemic has imposed radical changes in our daily activities. In order to slow infection rates, social isolation measures have been strongly recommended for the World Health Organization (WHO), especially for groups at risk of severe illness such as older

individuals and those with underlying health conditions [1]. Global estimates suggest that 1.7 billion individuals (22% of the global population) are at risk of severe COVID-19 [2], which includes 43 million prevalent cancer cases (diagnosed with cancer in the past 5 years) [3]. In addition, obesity, which is highly prevalent in western countries, has been linked with increased risk of COVID-19-related complications and several types of cancer (e.g., breast, colorectal and endometrial) [4].

Patients with cancer have higher risk of being admitted to intensive care unit requiring invasive ventilators or dying from COVID-19 than patients without cancer due to their systemic immunosuppressive state induced by the disease and its pharmacological treatments [5]. In addition, patients with cancer tend to be older and have other comorbidities (e.g., hypertension, diabetes and cardiovascular disease) related to poorer prognosis for COVID-19, which reinforce the importance of self-isolation measures for these patients. At the same time, however, social isolation policies have reduced follow-up visits for regular pharmacological cancer treatment, as well as adhering to non-pharmacological recommendations such as physical activity.

In the last decade, several oncology-related organizations such as the World Cancer Research Fund (WCRF), the American Cancer Society (ACS), the European Society for Clinical Nutrition and Metabolism (ESPEN), the American

✉ Leandro F. M. Rezende
leandro.rezende@unifesp.br

¹ Universidade Federal de São Paulo, Escola Paulista de Medicina, Departamento de Medicina Preventiva, Rua Botucatu, 740 – 4º Andar – sala 457 – Vila Clementino – CEP, São Paulo, SP 04023-062, Brazil

² Department of Nutrition, Harvard T.H. Chan School of Public Health, Boston, MA, USA

³ Laboratorio de Ciencias de la Actividad Física, el Deporte y la Salud, Facultad de Ciencias Médicas, Universidad de Santiago de Chile, USACH, Santiago, Chile

⁴ Departamento de Medicina Preventiva, Faculdade de Medicina FMUSP, Universidade de Sao Paulo, Sao Paulo, SP, Brazil

⁵ Department of Epidemiology, Harvard T.H. Chan School of Public Health, Boston, MA, USA

⁶ Channing Division of Network Medicine, Department of Medicine, Brigham and Women's Hospital and Harvard Medical School, Boston, MA, USA

Society of Clinical Oncology (ASCO), the National Comprehensive Cancer Network (NCCN) [6], as well as the American College of Sports Medicine (ACSM) [7] have provided guidance for and summarized the evidence on the role of physical activity for cancer patients. In summary, strong scientific evidence supports the safety and efficacy of physical activity to address several health benefits for cancer survivors, including reduced anxiety, fewer depressive symptoms, less fatigue, better quality of life, and improved physical function [7]. Of note, many of the health benefits, especially those related to mental health, are even more relevant in the context of social isolations. The comprehensive literature review of the ACSM Multidisciplinary Roundtable on Exercise and Cancer also suggested that physical activity, particularly postdiagnosis, is associated with improved survival from breast, colon, and prostate cancers [7]. These results are consistent with a recent meta-analysis on physical activity and mortality in cancer survivors including 134 epidemiological studies [8]. High vs. low physical activity pre-diagnosis (hazard ratio 0.82; 95% confidence interval 0.79–0.86) and postdiagnosis (hazard ratio 0.63; 95% confidence interval 0.53–0.75) were associated with improved survival outcome for all-cancer combined [8]. While it is likely that reverse causation contributes to some of the association (i.e., those with better health and prognosis are more able to exercise), preliminary results from randomized trials showing the effect of exercise on survival suggest that bias is unlikely to entirely account for the protective association [9, 10]. Reductions in cancer-specific mortality and all-cause mortality were also observed for pre-diagnosis and postdiagnosis physical activity in breast and colorectal cancer survivors [8].

Physical activity guidelines for cancer survivors are essentially the same as for the general adult population. Most of the oncology organizations recommend cancer survivors to engage in regular 150 min per week of aerobic, moderate to vigorous intensity physical activity. Of note, scientific evidence is not clear about the best type or domain of physical activity for people with cancer [8]; thus, guidelines suggest to include physical activity as part of everyday life [6]. Herein, physical activity is defined as any movement produced by skeletal muscle that results in more energy expenditure than resting or sedentary activities [6]. Examples of types of physical activity include recreational (e.g., exercise, running, sports, dancing and other forms of physical training), transport (walking and cycling) and household activities. Muscle-strengthening activities, such as weight lifting or resistance training, have also been recommended twice a week for additional health benefits. Replacing sedentary activities by light physical activities have also been recommended, although there are limited epidemiological evidence linking sedentary time to health outcomes in cancer survivors.

Physical inactivity (not meeting the physical activity guidelines) and prolonged sitting time are highly prevalent among cancer patients, partially due to persistent symptoms such as fatigue, which may contribute to these behaviors in addition to self-isolation measures. Furthermore, cardiovascular disease among cancer patients is also a concern, and clinicians have historically recommended patients to rest and avoid physical activity. Data from USA and UK cancer patients suggested that only approximately a third to 45% of the patients accumulated at least 150 min of moderate to vigorous physical activity per week [7]. In Brazil, only 45% of people with cancer meet physical activity guidelines [11].

The COVID-19 pandemic and its social distancing and isolation policies have created a “sedentaryogenic” environment where meeting physical activity guidelines becomes especially challenging for people with cancer. In addition, cancer patients are less likely to attend follow-up visits during the COVID-19 pandemic, which further reduces the opportunities to discuss the importance of physical activity during and after treatment. Yet, we recommend that oncology clinicians and health practitioners should provide evidence-based counseling about the benefits of physical activity for the health of their cancer patients.

The Exercise is Medicine (EIM) initiative have suggested a three-step approach to help patients keep moving throughout their treatment [12]. First step, health professionals should assess physical activity as a vital sign at regular intervals, which could be provided through regular texts or phone calls. Second, clinicians should advise cancer patients to increase physical activity and reduce prolonged sedentary time to help them reach the physical activity guidelines and its associated health benefits. Third, clinicians may refer patients to appropriate oriented-exercise programs based on clinical information, patients’ preferences and physical activity levels. This third step might be especially challenging in the context of social isolation, as most of the physical activity programs, gyms and health-care professionals are not recommended to be frequented during the pandemic. Alternatively, health professionals may refer/recommend to physically inactive patients to progressively replace sitting activities to active breaks of walking at home. For physically active cancer patients, maintaining exercise can be encouraged, but may need to be adapted to the home setting. Extensive material to promote physical activity for cancer patients is available to download in the EIM webpage [12].

Cancer patients are at increased risk of severe COVID-19 and therefore should follow the recommendations of self-isolation. During this period, physical inactivity and prolonged sedentary time should be avoided, if possible. Strong epidemiological evidence supports the safety and efficacy of physical activity to address important health outcomes for cancer patients [7]. During COVID-19 pandemic, people with cancer are less likely to attend follow-up visits,

which might reduce the opportunities for evidence-based counseling. Yet arguably more important than ever, oncologists and health practitioners have an important role on the promotion of an active lifestyle for these patients during the pandemic and thereafter.

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Compliance with ethical standards

Conflict of interest The authors declare no competing interests.

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