

Chart III - Systematization of the main evidence on physical activity related to COVID-19

Author	Study type	Objective	Evidence
Halabchi <i>et al.</i> 2020 [1]	Information Article	Check in the field of sports and exercise medicine whether PA is appropriate during the outbreak of COVID-19.	Low to moderate intensity exercise is recommended for healthy or asymptomatic people. For people with upper respiratory tract infection (IRS) with symptoms limited to the neck, a 10-minute running test is suggested to assess the general condition and, if signs are deteriorated, physical activity should be prohibited until full recovery. For people with IRS (symptoms below the neck) PA should be banned until full recovery.
Laddu <i>et al.</i> 2020 [19]	Comment	Strengthen the benefits of regular PA in improving immune function and reducing the risk, duration or severity of infections.	Evidence suggests the regular PA (~ 150 min per week) of moderate intensity for optimal immune support. However, even acute sessions of PA showed protection against viral infections, supporting the idea that just moving more in the form of structured activity every day can be an important strategy to optimize immunity and prevent or mitigate the severity of the infection..
Shirvani e Rostamkhani 2020 [30]	Narrative Review	Analyze the main considerations about PA during the COVID-19 outbreak.	Healthy or asymptomatic individuals may exercise moderately. People with mild symptoms of the upper respiratory tract may perform PA slightly with caution. Suspected symptoms of Covid-19 (eg, fever, severe sore throat, body aches, shortness of breath, general fatigue, chest cough) should avoid exercise.
Simpson & Katisanis 2020 [23]	Point of view	Inform about the need to maintain the recommended exercise levels during the COVID-19 pandemic to improve immune function.	It has been found that high levels of cardiorespiratory fitness and exercising with moderate to vigorous intensity can improve immunological responses to vaccination, reduce chronic low-grade inflammation and improve various immunological markers.
Zhu 2020 [31]	Interview	Should you exercise during the coronavirus outbreak, and if so, how?	Dr Woods says it is safe to exercise during the coronavirus outbreak. However, if the person is sedentary, they should not overdo the exercises and those who have already been infected with COVID-19 can exercise moderately, if the symptoms of the upper respiratory tract are mild.
Song <i>et al.</i> 2020 [14]	Review	Summarize the current literature on the effects of PA on influenza or pneumonia and determine the most appropriate form of PA in the elderly.	Literature review demonstrated that moderate long-term aerobic exercise can help to reduce the risk of influenza-related infection, improve immune responses and vaccination against pneumonia in the elderly. In addition, traditional Asian martial arts can also contribute to some related benefits.

Hammami <i>et al.</i> 2020 [32]	Comment	Provide useful information on home PA for sedentary people, including children and adolescents during the current pandemic or other outbreaks of infectious diseases.	Following the recommendations of the WHO, children, and young people (5 to 17 years) should perform 60 min / week of daily PA with aerobic exercises of moderate to vigorous intensity in addition to muscle and bone strengthening three times a week. For adults and the elderly, daily PA for 75 min / week is recommended with aerobic exercises of vigorous intensity or 150 min / week of moderate intensity, with muscle strengthening twice a week.
Jakobsson <i>et al.</i> 2020 [33]	Opinion article	Provide recommendations for maintaining and performing PA as a means of preventing the decline in metabolic and immunological functions during COVID-19	For additional health benefits, 300 minutes of moderate PA or 150 minutes of vigorous intensity per week is recommended. A combination of muscle strengthening exercises, walking, climbing stairs and performing household chores is also recommended to maintain PA during the coronavirus crisis. In the case of exercising outdoors you should keep your distance from other people. Intense exercise for an extended period should be avoided.
Raiol 2020 [25]	Review	Clarify the effects of physical exercise during COVID-19 related to immunity, disease control, functional capacity, and mental health.	During Social Distancing, physical exercises should be performed at home or outdoors, avoiding crowds. It is recommended 5 to 7 days a week with adjustments in the volume and intensity of the training. Resistance exercises must be inserted at least 2 to 3 days a week. The intensity should be moderate in order to maximize the positive effects on the immune system.
Hall <i>et al.</i> 2020 [34]	Comment	Report the impact of coronavirus in relation to people's physical inactivity and sedentary behavior.	The intersection between the current risks of health complications and the mortality rates associated with COVID-19 and the current state of physical inactivity and sedentary behavior cannot be ignored. We must take this opportunity as valuable lessons from this outbreak and improve human's health outcomes and resilience during future pandemics.
Zbinden-Foncea <i>et al.</i> 2020 [6]	Review	Verify whether the high cardiorespiratory fitness provides some protection against pro-inflammatory responses after infection by SARS - CoV - 2	Given the positive effects of moderate doses of exercise on selected immune markers associated with many disease states, it is suggested that physical training and high levels of cardiorespiratory fitness are likely to be immunoprotective in patients infected with SARS-CoV-2..
Goethals <i>et al.</i> 2020 [35]	Qualitative research	Assess the impact of the quarantine period on the organizations of the PA program and on the physical and mental health of French elderly people.	This study suggests that COVID-19 affected, before quarantine measures, the number of PA programs in groups of elderly people. A national policy to support elderly adults for PA at home seems essential to help them integrate simple and safe ways to stay physically active at home. Before the quarantine measures, COVID-19 affected the number of elderly people attending PA programs. This was mainly due to the fear of meeting potentially infected people.

Jiménez-Pavón <i>et al.</i> 2020 [13]	Special comment	Suggest PA as therapy to fight the physical and mental effects of COVID-19 with focus on the elderly.	Physical exercise becomes essential for the elderly during quarantine because it maintains the physiological function and reserve of most organic systems, contributing to the fight against the physical and mental consequences and the severity of COVID-19.
Chen <i>et al.</i> 2020 [26]	Opinion article	Guidance on the need for regular PA and caution during the COVID-19 crisis.	Regular PA at home is an important strategy for healthy living during COVID-19. At least 30 minutes of moderate PA should be performed every day and/or at least 20 minutes of vigorous PA every two days. A combination of both intensities is recommended in addition to muscle strengthening regularly.
Pitanga <i>et al.</i> 2020 [37]	Point of view	Highlight the importance and propose suggestions for continuing PA and reducing sedentary behavior during the pandemic of the new coronavirus in Brazil.	Evidence based on the literature confirms the importance of engaging in PA during COVID-19, with mild to moderate intensity/duration, preferably in an open environment, or even indoors. Furthermore, to emphasize the need to reduce the time spent sitting, lying down, or reclining in front of the television, computer and the like, with the exception of hours of sleep, thus reducing sedentary behavior.
Cheval <i>et al.</i> 2020 [38]	Longitudinal Study	Assess whether changes in PA and sedentary behaviors during COVID-19 quarantine are associated with changes in mental and physical health.	Differences in PA and sedentary behaviors were assessed before and during the quarantine. Changes in PA and sedentary behaviors during confinement are associated with changes in physical and mental health. Ensuring sufficient levels of PA and reducing sedentary time during confinement can benefit individuals' health
Oliveira Neto <i>et al.</i> 2020 [39]	Opinion article	Propose to integrate physiological and psychobiological aspects of how physical exercise can be prescribed at home in the face of social isolation worldwide.	Considering the physiological aspects, a prescription model that encourages the performance of at least 150 minutes of moderate intensity aerobic exercise and considers the possibility of performing strength exercises for the main muscle groups. Behavioral and motivational aspects should be considered alongside the physiological variables as one of the major challenges, given the need to conduct training with little or no face-to-face supervision, which can increase behavioral difficulties (for example, habit) to practice physical exercises.
Fallon <i>et al.</i> 2020 [18]	Editorial	Present varied and adapted forms for physical exercise at home during the COVID-19 pandemic.	Aerobic exercise can be done using stairs and inclines; running on the spot; home exercise bikes, treadmills and running machines; or laps from the backyard pool. Strengthening activities can be performed through exercises against body weight, such as squats, push-ups, abdominals, and calf raises at the edge of a stair or incline.
Ferreira <i>et al.</i> 2020 [11]	Editorial	Encourage the maintenance of a physically active routine by the population as a preventive measure for health and coping with COVID-19	Behaviors and attitudes that will help in maintaining a physically active life, physical and mental health are recommended to the population: performing physical activities that are pleasurable; perform activities of daily living such as cleaning, maintenance and organization of domestic spaces; playing and exercising with children, adolescents and pets; avoid sedentary behavior, reduce the time spent using electronic devices, and set aside a few minutes for stretching, relaxation and meditation.

Rodríguez <i>et al.</i> 2020 [15]	Editorial	Reinforce the need for a new strategy to achieve a healthy level of physical exercise during COVID-19.	The authors recommend moderate forms of exercise, such as low to moderate resistance sports (running, Nordic walking and fast walking in parks, trails and forest roads with flat terrain and affordable). Muscle strengthening activities and other types of physical activity that can be done at home or outdoors, at a safe distance from others.
Rahmati-Ahmadabad & Hosseini 2020 [40]	Mini Review	Suggest a conservative approach on the use of high intensity exercises on inflammatory and immunological factors.	Based on indirect evidence, high-intensity exercise can be harmful (especially in obese people) and worsen the COVID-19 virus. However, moderate-intensity exercise should be recommended as a non-pharmacological, inexpensive, and viable way of dealing with the COVID-19 virus.
Frühauf <i>et al.</i> 2020 [8]	Editorial	Present scientifically-based interdisciplinary recommendations for exercising during COVID-19	The authors recommend moderate forms of exercise, such as low to moderate resistance sports (running, Nordic walking and fast walking in parks, trails and forest roads with flat terrain and affordable). Muscle strengthening activities and other types of physical activity that can be done at home or outdoors, at a safe distance from others.
Chen <i>et al.</i> 2020 [41]	Opinion article	Present actions and precautions for the return of Chinese school-age children and adolescents to physical activity after COVID-19..	With the return to school activities there is a need for public health to ensure that all Chinese children and youth effectively overcome the imposed restrictions that limited exercise, participating in the recommended levels of PA during the school day. This resumption of regular exercise can help students recover from the stress and anxiety they experienced while in quarantine.