



*Invited Editorial*

## **COVID-19 Lockdowns: Exacerbating the Silent Pandemic**

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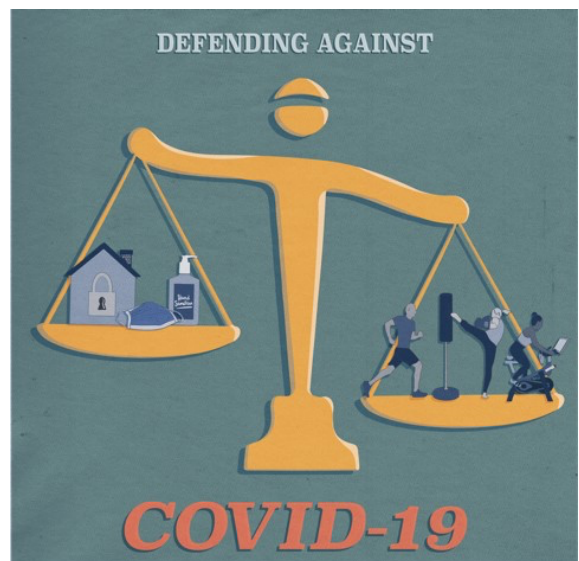
### ABSTRACT

*International Journal of Exercise Science* 14(3): 1256-1260, 2021. The global medical community has exalted the vaccine as the champion solution to end the violent toll inflicted by COVID-19. While the role of vaccines cannot be undervalued in wide-scale intervention, presenting them as the sole solution exonerates individuals of the importance of taking ownership over their lifestyle choices. This editorial focuses on the importance of physical activity as a crucial component of COVID-19 prevention programs and a long-term investment against chronic diseases.

**KEY WORDS:** Sedentary behavior, physical activity, exercise, infectious diseases, chronic diseases

The COVID-19 pandemic brought life to a screeching halt. Efforts designed to limit transmission such as mask mandates and social distancing quickly shifted their gaze to the very movement of people, closing – among most businesses – recreational facilities such as gyms, parks, and beaches. This precautionary, near-global house arrest exacerbated a pre-existing, often forgotten pandemic: physical inactivity. The World Health Organization estimates that 5 million deaths could be avoided annually if the global population was more active (20). That surpasses the total number of registered COVID-19 deaths to date by half a million (19). Despite the wealth of scientific evidence emphasizing the necessity of exercise to maintain health in people of all ages, exercise referral

by the medical community is lacking in most places around the world. The link between growing inactivity and the number of hospitalizations and deaths of COVID-19



patients (14) makes it increasingly inexcusable to view these two pandemics as separate. The pandemic enabled physical inactivity and all of its sequelae such as metabolic syndrome and behavioral health problems. Public health measures over the past 18 months have been almost unilaterally aimed at preventing contact with the new coronavirus. While this is inarguably important, COVID-19 remains highly contagious and it is now necessary to recognize the uncomfortable truth that this approach was taken at the expense of optimizing individuals' immune systems to rid the virus after nearly inevitable contact.

The medical community has overwhelmingly emphasized the role of vaccines as the one key solution to halt the violent toll the virus has taken on the global population. While the role of vaccines cannot be undervalued, presenting them as the sole solution exonerates individuals of the importance of the health of their own lifestyles. According to a recent paper published in the *Journal of the American Heart Association*, 30% of COVID-19 hospitalizations occurring in November 2020 were attributable to obesity, 26% to hypertension, 21% to diabetes, and 12% to heart failure. Their model predicted that almost two-thirds of the hospitalizations might have been prevented if these comorbidities that affect the immune system had not been present (11). In other words, the number of infections may have been the same, but a stronger immune system brought on by habitual exercise might have been able to fight the infection without needing hospitalization. Beyond the myriad benefits of exercise, an active lifestyle proves even more beneficial and far more important in our current global state: it is an effective preventive tool for most of the pre-existing chronic conditions that predict COVID-19 hospitalizations (6,15,23), improves immune system response (10,17,1), and may also enhance vaccine-induced antibody production (2). Regular moderate-to-vigorous physical activity has been shown to increase the body's antibody response to vaccination as well as lower the risk of community-acquired infection by 31% and risk of infectious-disease mortality by 37% (2). On the molecular level, physical activity may help protect against acute respiratory distress syndrome (ARDS) and multiorgan failure—severe complications of COVID-19—by upregulating the potent antioxidant enzyme extracellular superoxide dismutase (EcsOD) (8,21,22). However, this is only the tip of the iceberg. The amount of existing research implicating physical inactivity as a key contributor to many chronic diseases is overwhelming.

The COVID-19 pandemic has made it glaringly obvious that we must break the habits and mindset of sedentary behavior and underscore the importance of physical activity. Although scientists have posited that exercising safely (i.e., isolated and outdoors or indoors with social distancing and mask wearing) is a valuable way to strengthen our immune system and protect ourselves from our unseen enemy (4,5), it is worrisome how many people—aware of this information—still spend more time looking at screens rather than staying physically active. The pandemic-induced social isolation decreased physical activity ( $g = -0.913$ ), increased sitting time ( $g = 0.698$ ), and screen time ( $g = 0.653$ ) among those who were already active before the pandemic. Furthermore, sitting and screen time also increased among the inactive population ( $g = 0.565$ ,  $g = 0.589$ ). Beyond the physical consequences, the disruption of normal lifestyles has strongly impacted mental health with greater levels of stress, sleep disorders, eating disorders, anxiety, panic attacks, and depression (9). These consequences are exacerbated in communities with less resources as unequal access to healthcare and education,

financial insecurity, and discrimination have added to the daily strain of individuals. Nevertheless, exercise helps combat the psychological impact of prolonged periods of social isolation, reducing feelings of anxiety, depression, and stress (3,10,16,18,24).

We are not out of the woods yet. The fourth wave of the pandemic, quarterbacked by the highly infectious Delta variant of the virus, underlines the importance of wide spread vaccination to reduce the number of deadly cases. Continued virus mutations prolong the return to 'normalcy' and require an expansion beyond (though still including) an emphasis on limiting the spread via vaccination, social distancing, and mask mandates. Much of the world has reactively plugged leaks to mitigate short term collateral, severely undermining complementary efforts to mitigate potentially disastrous long-term damage. For example, social distancing mandates that have helped save lives have in other cases exacerbated the consequences of physical inactivity. Habitual exercise is a long-term investment on an individual and national scale, as it helps prevent chronic illnesses, as well as devastating economic impacts – physical inactivity is associated with 1.5-3% of total direct healthcare cost in developed countries (12). The role of exercise as medicine is not a new concept, as it has shown beneficial effects on 23 diseases or health conditions (13), but it is largely omitted from regulatory integration. The obvious urgency of COVID-19 presents a unique opportunity to address both pandemics simultaneously by shifting public mindsets, government efforts and medical training from palliative to preventative medicine. It is time to encourage people to go out safely and exercise regularly. We have this powerful and affordable “drug” with very few side effects already at our disposal. With international guidelines recommending 150-300 minutes of moderate-intensity activity per week in order to reap the health benefits of exercise (7), that include improved immune function, reduced risks and improved outcomes for a variety of cancers, enhanced cognition and memory, improvements in mental health, higher overall quality of life and promotion of healthy aging. The numerous benefits beg the question: “Have you been exercising enough?”

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