

## عنوان مقاله:

The Role of Exercise and Physical Activity in Protecting Against the Inflammatory Responses Triggered by COVID-19:  
An Integrative Review of the Current Literature

## محل انتشار:

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## خلاصه مقاله:

Coronavirus Disease 2019 (COVID-19) is an infectious disease caused by the SARS-CoV-2 virus. The disease is still out of control despite unprecedented social distancing and other constraints. Mortality, mutations, economic and health effects are increasing worldwide. This novel virus is caused by over-release and uncontrolled and impaired regulation of pro-inflammatory cytokines that leads to cytokine storm. Cytokine storm is considered to be one of the major causes of severe acute respiratory syndrome and multiple organ failure that plays an important role in the worsening process of COVID-19. Several studies have shown the effect of physical activity and exercise as an efficient therapy for the treatment and prevention of chronic diseases. The sub-mechanisms between regular physical activity and exercise, and health are numerous. Physical activity and exercise influence on the immune system and its antiviral defenses. The adaptations caused by regular exercise increase the effectiveness of the immune system, which actual levels can affect the severity of SARS-CoV-2 infection. Also, Exercise may provide protection against COVID-19 by increasing performance of some physiological systems, so that endurance training causes numerous biochemical changes in the diaphragm muscle, resulting in the production of a phenotype that is protected against several challenges, including long mechanical ventilation. Therefore, people who exercise continuously and regularly may develop higher antibody titers to the SARS-CoV-2 strain found in the vaccine compared to those who do not exercise. This insight can help to properly design physical activity and exercise programs as a preventative and/or therapeutic approach against the COVID-19 pandemic.

## کلمات کلیدی:

Coronavirus, Cytokine storm, Anti-Inflammatory, Exercise, Physical Activity

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