

## **Consequences on Performance After a Period of Detraining Due to Covid-19 Infection: Current Challenges and Emerging Concerns**

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### **EDITORIAL**

It is with great pleasure that we welcome the third edition of LabD – Journal of Sports Sciences. A scientific publication with free access for reading, downloading, distribution and printing, without any authorization from the editors or authors.

The Covid-19 pandemic has drastically changed the way people interact as well as their daily habits (Haleem et al., 2020; Lades et al., 2020). Over the last 3 years, we have gone through forced confinement, self-isolation, changing working methods, changing teaching methods, social distancing, canceling sporting events, changing sports habits and routines (Haddad et al., 2021; Ravalli & Musumeci, 2020; Stanton et al., 2020). At this moment, we are rapidly approaching the 7th wave of infection with no apparent signs of a drastic reduction in infections, even after the increase in the number of vaccinated worldwide (Cascini et al., 2021). In fact, the persistence of the pandemic is causing long-term structural changes in the patterns and level of physical activity in populations (Bennett et al., 2021; Reyes-Olavarría et al., 2020).

Inevitably, after the emergence of Covid -19 in 2019, there was a growing concern about the potential impact that exposure to the virus can have on the return to physical activity (professional and amateur) (Burgstahler & Nieß, 2021; Halle et al., 2021; Kennedy & Sharma, 2020; Salman et al., 2021). In fact, the Covid-19 pandemic forced the imposition of a wide range of limitations that inevitably led to a reduction in physical activity and a consequent increase in sedentary lifestyle, which is exacerbating global efforts to promote active and healthy lifestyles (Burgstahler & Nieß, 2021; Gallè et al., 2020; Okuyama et al., 2021). Previous investigations have reported on the benefits resulting from physical activity in all types of population and at all ages as a way of promoting health and physical and psychological well-being (Branquinho,

Forte, et al., 2022; Branquinho, Ribeiro, et al., 2022; Callow et al., 2020; Dwyer et al., 2020). For these reasons, it is still necessary to investigate the real impact on sports performance after infection by Covid -19 so that recommendations can be prescribed that help people to return to sports practice. However, through the continuous study of the pathogenesis and unpredictability of post-infection effects (i.e., in the short, medium and long term) (Maltezou et al., 2021) remain scarce and imprecise most of the recommendations made available so far and therefore, there is an urgent need for further research in this regard.

It is known that periods of inactivity or with reduced physical activity (detraining periods) (Branquinho et al., 2020; Latella & Haff, 2020), even if less than 4 weeks, can result in a progressive decrease in physical and physiological adaptations induced by exercise with changes in several body systems (e.g., cardiovascular, cardiorespiratory, metabolic) and these factors should be taken into account when resuming physical activity after infection by Covid-19 (Callow et al., 2020; Dwyer et al., 2020; Maltezou et al., 2021). Thus, and in the light of the scientific evidence reported so far, it seems unwise for professional, semi-professional, amateur athletes and physical exercise practitioners to consider returning to practice with the same intensity levels with which they exercised before exposure to the SARS-coV-2 virus (Baker et al., 2021). Therefore, there is an urgent need for studies that make recommendations for all types of physical exercise practitioners and that can be useful in minimizing the risk of potential negative effects after a prolonged break (i.e., detraining period). So far, some investigations (Burgstahler & Nieß, 2021; Chen et al., 2020; Salman et al., 2021) indicate that the resumption of physical exercise should be gradually progressive (i.e., intensity vs. frequency) in order to avoid episodes of injury and the premature onset of fatigue through reduced abilities. While others recommend consulting sports specialists to assess your health condition and real physical possibilities after infection (Drezner et al., 2022; Schinke et al., 2020).

Sports science professionals can therefore play a decisive role in formulating training programs and strategies aimed at returning to physical activity after a period of detraining due to Covid-19 infection, and for these reasons it is expected that in the near future there will be an exponential increase in investigations related to the topic.

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