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Effect of face mask use on cardioventilatory and performance parameters: a systematic review

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The main way to combat and prevent the spread of COVID-19 is through the use of face masks in all situations, whether in public places or workspaces and also during physical activity or exercise. However, recommendations for the use of face masks during exercise vary globally and the physiological impact of using tissue or surgical masks during this activity is not well understood. Thus, the objective of this work is to carry out a systematic review to investigate the impact of using a mask during physical activity or exercise in the parameters: ventilatory, physiological, and performance. A structured search was performed following the guidelines of the Preferred Reporting Items for Systematic Review (PRISMA) in the Medline / PubMed and Web of Science, Scopus and Bireme / Lilacs / BVS databases until May 2021. Seven published studies were included in the systematic review. All studies were randomized controlled and crossover clinical trials, seven studies used a surgical mask in their analysis, three studies used a P95 mask, and two studies used a cloth mask. When analyzing the results, four studies showed no significant difference in the use of surgical masks in relation to performance, ventilatory and hemodynamic function parameters; three studies showed a significant worsening with the condition of using a mask in ventilatory, cardiorespiratory and performance parameters. It was concluded that the findings of the evaluated studies showed divergences in ventilatory, physiological and performance parameters. It is believed that it may be related to the types of exercise protocols used in the assessment. In addition, the study methods had a low risk of bias.

Keyword: Performance. COVID-19. Exercise Test.

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