

The Effect of Surgical Mask Use on the Respiratory Functions of Healthcare Professionals at Different Physical Activity Levels

Cerrahi Maske Kullanımının Farklı Fiziksel Aktivite Seviyelerindeki Sağlık Çalışanlarının Solunum Fonksiyonları Üzerine Etkisi

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Dear Editor,

The article, namely, “The Effect of Surgical Mask Use on the Respiratory Functions of Healthcare Professionals at Different Physical Activity Levels,” published by Yakal et al.^[1] in the *Koşuyolu Heart Journal* (2024;27(3):103-7), offers valuable insights into the challenges faced by healthcare workers when using surgical masks during low-to-moderate physical activities. This research has the potential to significantly enhance the current literature.

The authors have studied 23 healthy and active individuals (12 females and 11 males) working as health workers. The participants were subjected to pulmonary function tests and blood oxygen saturation measurements at rest and after performing a treadmill walk at two different speed levels. The authors found that wearing surgical masks during work may alter certain respiratory functions in healthy individuals. Blood oxygen saturation values were lower at moderate physical activity than low activities. Increased humidity and temperature created by surgical masks and, therefore, decreased airflow may cause a decrease in blood oxygenation as the intensity of physical activity increases, leading to significant decreases in transcutaneous oxygen saturation.

The authors did not find any significant difference between respiratory function test values such as forced vital capacity (FVC), forced expiratory volume (FEV₁), peak expiratory flow, maximal voluntary ventilation, forced expiratory flow (FEF_{25%}), FEF_{50%}, and FEF_{25–75%} at rest and two different speeds of physical activity despite the barrier effect of the surgical mask. However, they found that FEV₁/FVC, FEV₁/FVC%, FEF₇₅, and FEF_{75%} parameters determined at high-speed physical activity were significantly lower than values at rest.

As I thought, the authors also implied that surgical masks worn by healthcare workers during their professional activities at low-to-moderate exertion intensity may cause significant changes in respiratory function due to the microenvironment, increased humidity and temperature related on surgical masks may decrease airflow and blood oxygenation during increased physical activity,^[2] and increased airway resistance in the mask.

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