

Comparative Study on the Effect of e-Cigarette Use in Vapers and Non-vapers on Lung Health and Athletic Performance in University Football Players

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ABSTRACT

Introduction: The increasing use of electronic cigarettes (e-Cigarettes) among young adults has raised significant public health concerns, particularly regarding their effects on respiratory function and physical performance. Although often perceived as a safer alternative to conventional smoking, emerging evidence suggests potential adverse physiological effects, especially in physically active populations such as athletes.

Aim: To evaluate and compare lung function and athletic performance between e-Cigarette users and non-users among university football players.

Materials and Methods: A comparative cross-sectional study was conducted on 32 male university football players aged 18-24 years, recruited through convenience sampling. Participants were divided into two groups: e-cigarette users (n=16) and non-users (n=16). Outcome measures included Peak Expiratory Flow Rate (PEFR) to assess lung function, Yo-Yo Intermittent Recovery Test (Level 1) for aerobic endurance, estimated VO_2 max, and Rating of Perceived

Exertion (RPE). Data were analysed using descriptive statistics and an independent samples t-test, with significance set at $p < 0.05$.

Results: e-Cigarette users demonstrated significantly lower PEFR values compared to non-users ($p < 0.001$), indicating compromised pulmonary function. Endurance performance was also significantly reduced among users, as reflected by lower total distance, shuttles, and VO_2 max ($p < 0.001$). Additionally, e-cigarette users reported higher perceived exertion and showed delayed heart rate recovery. These findings suggest impaired cardiorespiratory fitness and reduced exercise tolerance among users.

Conclusion: e-Cigarette use is associated with significantly reduced lung function and impaired athletic performance in university football players. Non-users exhibited superior pulmonary efficiency, endurance capacity, and recovery responses. The findings highlight the potential risks of vaping in athletic populations and emphasise the need for awareness and preventive strategies.

Keywords: Athletic performance, E-cigarettes, Football players, Lung function, Vaping, VO_2 max.

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