

Respiratory Parameters and Performance in Elite Female Soccer Players: A Case Study of Halotherapy Intervention

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Abstract

Background: In the realm of sports science, researchers are constantly exploring innovative methods to optimize athletic performance. One such avenue is investigating the impact of post-training halotherapy on athletes. The main objective of this study was to investigate the impact of post-training halotherapy, which simulated a salt-cave environment, on the aerobic performance parameters of female soccer players competing in the first league.

Methodology: The study was conducted with a women's soccer team that competes in the Turkish Football Federation Women's Super League and has won the championship in the women's league. A total of twenty-eight Turkish female soccer players volunteered to participate in the study. Fourteen Turkish female soccer players were in the control group (CG), and fourteen underwent halotherapy in the experimental group (HG). The age, height, and body weight of both groups were recorded. A randomized parallel group design was employed to compare the two groups. Various measurements, including body composition (height and body weight), respiratory parameters (forced vital capacity-FVC, forced exhalation volume in 1 second-FEV1, vital capacity-VC), and Yo-Yo Intermittent Recovery Test Level 1 (Yo-Yo IRT1) performance were taken from all participants during the study.

Results: In relation to FVC, FEV1, VC, and Yo-Yo IRT1 metrics over the duration of the training regimen ($p < 0.05$). Remarkably, the HG conspicuously demonstrated more pronounced enhancements when juxtaposed with the CG across all aforementioned parameters ($p < 0.05$).

Conclusions: The findings from the study suggest that the integration of post-training halotherapy could lead to improvements in aerobic and respiratory performance parameters of Turkish female soccer players. Additionally, the results obtained from the study support this hypothesis. The study's outcomes imply that coaches and athletic performance trainers could enhance athletes' aerobic and respiratory performance metrics by incorporating post-training interventions. This proposition offers a pragmatic approach to improving athletic capacities, especially for female soccer players aiming for the Champions League and competing at high levels of competition.

Keywords Halotherapy, elite women soccer players, respiratory health, salt therapy, training intervention