

## Comparison of Two Online Intervention Protocols on Reducing Habitual Upper Body Postures: A Randomized Trial

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**Abstract :** Introduction: Habitual upper body postures are associated with online learning during the COVID-19 pandemic. This study explored whether adding an exercise routine to an ergonomic advice intervention improves these postures. Methods: In this randomized trial, 42 male adolescent students with a forward head posture were randomly divided into two equal groups, one allocated to ergonomic advice alone and the other to ergonomic advice plus an exercise routine. The angles of forward head, shoulder, and back postures were measured with a photogrammetric profile technique before and after the 8-week intervention period. Findings: During home quarantine, 76% of the students used their mobile phones, while 35% used a table-chair-computer for online learning. While significant reductions of the forward, shoulder, and back angles were found in both groups ( $P < 0.001$ ), the effect was significantly greater in the exercise group ( $P < 0.001$ : forward head, shoulder, and back angles reduced by some 9, 6, and 5 degrees respectively, compared with 4 degrees in the forward head, and 2 degrees in the shoulder and back angles for ergonomic advice alone. Conclusion: The exercise routine produced a greater improvement in habitual upper body postures than ergonomic advice alone, a finding that may extend beyond online learning at home.

**Keywords :** randomized trial, online learning, adolescent, posture, exercise, ergonomic advice

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