

Abstract

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Effects of mouthpiece use on auditory and visual reaction time in college males and females.

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Abstract

Studies in exercise science have suggested that the use of a mouthpiece can improve performance, and these improvements may be linked to an enhancement in temporomandibular joint (TMJ) positioning. Studies have suggested that by improving TMJ positioning, there is improved blood flow in the area of the TMJ. Changes in TMJ positioning may be improved with an oral device. The purpose of this study was to determine if there were improvements in auditory and visual reaction time with the use of a boil and bite mouthpiece. Using a BIOPAC system, study participants (N = 34) were asked to respond to an auditory signal during 40 trials. In the visual reaction time test, participants (N = 13) were assessed on how quickly they responded to a computer cue for a total of 30 trials. Auditory results showed a significant improvement with the use of a mouthpiece (241.44 ms) vs without a mouthpiece (249.94 ms). Visual results showed that participants performed slightly better with the mouthpiece (285.55 ms) vs without the mouthpiece (287.55 ms). These findings suggest that the use of mouthpiece positively affects visual and auditory reaction time, which is a vital aspect to optimal sport and exercise performance. Future studies should continue to shed light on possible reasons for the improvements in auditory and visual reaction time with the use of a mouthpiece. In addition, future studies should further illuminate what, if any, connection these improvements have with enhanced TMJ positioning.

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