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A Study on the Effectiveness of a Self-Fit Mandibular Repositioning Appliance on Increasing Human Strength and Endurance Capabilities

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Title

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Abstract

Years of study and constant anecdotal information dating back to the ancient Romans exists regarding the relationship of mandibular position, occlusion surface changes, and human performance. Such old sayings and practices like "bite the bullet" and the actual act of clenching one's teeth on a stick prior to exertion or in anticipation of pain are but two examples of how this relationship has been intuitively understood by man for some time. Previous scientific works in this area have generally suffered at least one serious shortcoming in data collection, data analysis, test device flaws or lack of control measures. There seem to be emotionally charged efforts to either prove or disprove the apparent relationship between jaw positioning and human performance. It is unclear why there has been so much controversy but the fact that this emotional side taking exists leads to concerns about preconceptions on the part of the previous research teams. In an effort to reach some realistic levels of confidence, this effort has been accomplished in a double blind, placebo controlled, unbiased manner utilizing the tenets of the scientific method throughout. The data indicate that a self-fit, intra-oral device is beneficial in improving grip strength values for both men and women at a confidence level of at least 95 percent. In addition, there is a 96 percent confidence level that a mandibular repositioning appliance is of greater assistance in grip strength tests than a placebo device. Therefore, the results of this research initiative demonstrate that statistically relevant human performance increases are possible by employing a self-fit, intra-oral device in active men and women of all ages.

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