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Examination of the relationship between mandibular position and body posture.

Sakaguchi K, Mehta NR, Abdallah EF, Forgione AG, Hirayama H, Kawasaki T, Yokoyama A.

Tufts Craniofacial Pain Center, Tufts University, School of Dental Medicine, One Kneeland Street, 6th Floor, Boston, MA 02111, USA.

The purpose of this study was to evaluate the effect of changing mandibular position on body posture and reciprocally, body posture on mandibular position. Forty-five (45) asymptomatic subjects (24 males and 21 females, ages 21-53 years, mean age 30.7 years) were included in this study and randomly assigned to one of two groups, based on the table of random numbers. The only difference between group I and group II was the sequence of the testing. The MatScan (Tekscan, Inc., South Boston, MA) system was used to measure the result of changes in body posture (center of foot pressure: COP) while subjects maintained the following 5 mandibular positions: (1) rest position, (2) centric occlusion, (3) clinically midlined jaw position with the labial frena aligned, (4) a placebo wax appliance, worn around the labial surfaces of the teeth and (5) right eccentric mandibular position. The T-Scan II (Tekscan, Inc., South Boston, MA) system was used to analyze occlusal force distribution in two postural positions, with and without a heel lift under the right foot. Total trajectory length of COP in centric occlusion was shorter than in the rest position ($p < 0.05$). COP area in right eccentric mandibular position was larger than in centric occlusion ($p < 0.05$). When subjects used a heel lift under the right foot, occlusal forces shifted to the right side compared to no heel lift ($p < 0.01$). Based on these findings, it was concluded that changing mandibular position affected body posture. Conversely, changing body posture affected mandibular position.

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