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THE MECHANISM OF CLASS II CORRECTION IN PATIENTS TREATED WITH THE FORUS FATIGUE RESISTANT DEVICE VERSUS HEADGEAR AND INTERMAXILLARY ELASTICS

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The objective of this study was to assess and compare the dental and skeletal changes induced by two specific treatment modalities for Class II Division I malocclusions in conjunction with comprehensive fixed appliances. The matched sample consisted of 32 (mean age 12.6 +/- 0.8 years) consecutively treated Forsus fatigue Resistant Device subjects (FRD group), 36 (mean age 12.3 +/- 0.7 years) headgear and Class II Elastics subjects (HGE) and 25 (mean age 12.3 +/- 0.7 years) untreated Class II division 1 subjects (control group). Lateral cephalograms were analyzed at the initiation (T1) and completion (T2) of therapy or observation. An ANOVA test was used to determine statistical differences between groups ($P < 0.05$).

Both the FRD and HGE treatment groups exhibited significant reduction in overjet and improvement in molar relationship, with minor differences in the mechanism of action. The FRD group showed a significant mesialization and proclination of mandibular dentition, along with moderate distalization of the maxillary dentition. The HGE group showed a significant restriction in maxillary forward growth and distalization of the maxillary dentition. Both treatment groups exhibited a significant improvement in sagittal skeletal relationships. The FRD groups had a tendency to be vertically neutral while increases in skeletal vertical dimensions were significant in the HE group. Treatment duration for the FRD group was significantly shorter than the HGE group.

In conclusion, the FRD protocol was effective in correcting Class II Division 1 malocclusions through dentoalveolar movement while the HGE protocol was effective through a combination of skeletal and dentoalveolar modifications.