## ABSTRACT

## Title: Cephalometric study of class II malocclusion treatment effects with the Carriere Motion 3D appliance in the mixed dentition

Introduction: Due to the lack of studies in the literature evaluating the skeletal and dental effects of Carriere Motion 3D in patients at an early age, this study proposes to evaluate the dental and skeletal effects of Carriere Motion 3D in the treatment of Class II malocclusion in patients with mixed dentition. Materials and methods: The sample was divided into two groups to compare the effects of Class II malocclusion treatment with Carriere Motion 3D. Thus, the groups consisted of 30 patients treated with Carriere Motion 3D and 26 patients with untreated Class II malocclusion. The Dolphin Imaging 11.5 program was used to measure the cephalometric variables. Intergroup differences in treatment changes were analyzed with the independent ttest and Mann-Whitney. Results: Comparison of the Class II malocclusion treatment with Carriere Motion 3D and the untreated Class II group showed a greater increase in the SNB angle in the group treated with Carriere Motion 3D and, consequently, a decrease in the ANB angle. There was a decrease in the Y axis in the group treated with Carriere Motion 3D and a statistically significant increase in the posterior facial height without any changes in the anterior facial height. The Carriere Motion 3D group also showed a decrease in overjet, overbite, and molar relationship. The correction of the molar relationship in the Carriere Motion 3D group was because of distoangulation of the maxillary first molar and mesialization of the mandibular first molar with buccal tipping of the mandibular incisors. **Conclusion:** The Carriere Motion appliance is effective in correcting Class II malocclusion because of mesialization of the mandibular first molar and distoangulation of the maxillary first molar.

Keywords: Class II malocclusion; orthodontic appliance; mixed dentition.