

# **Midfacial and mandibular morphometry of children with class II and class III malocclusions.**

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## **Abstract**

There is insufficient evidence in conventional cephalometric analysis of the actual sites of putative maxillofacial change in Class II and Class III malocclusions. The purpose of this study was to provide more information about the morphological characteristics of the midfacial complex and mandible in children with Class II or III malocclusions. Seventy children with Class II, division 1 malocclusion and 70 children with Class III malocclusion were compared with 70 children with normal occlusion. This study was conducted to carry out geometric morphometric assessments to localize alterations using Procrustes analysis and thin-plate spline analysis. Procrustes analysis indicated the midfacial and mandibular morphologies differed between normal occlusion subjects and subjects with Class II or Class III malocclusion ( $P < 0.0001$ ). The deformations in subjects with Class II malocclusion may represent a developmental elongation of the palatamaxillary complex and a shortening of the mandible anteroposteriorly, which leads to the appearance of a protruding midface and retruding mandibular profile. In contrast, the deformations in subjects with Class III malocclusion may represent a developmental shortening of the palatamaxillary complex and elongation of the mandible anteroposteriorly, which leads to the appearance of a retrognathic midface and prognathic mandibular profile.