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## **Influences of vertical occlusal discrepancies on condylar responses and craniofacial growth in growing rats**

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### **ABSTRACT**

The present study was conducted to investigate the influence of vertical occlusal discrepancies on condylar remodeling and the subsequent craniofacial growth in growing rats. Thirty 4-week-old male Wistar strain rats were used. A 1-mm-thick metal plate was bonded onto the occlusal surface of the maxillary molars to increase posterior dentoalveolar height. During the early phase of the experiment, the thickness of the proliferative and maturative / hypertrophic zones in the anterior and superior portions of the condyle was significantly smaller in the experimental group than in the controls. The number of TRAP-positive cells was significantly greater in the experimental group than in the controls. At the end of the experiment, decreased ramus height and a large gonial angle were found in the experimental group. Changes in the intra-articular environment associated with vertical occlusal discrepancies may influence condylar and craniofacial growth in growing

individuals, although some adaptive response of the condyle may be induced if growth potential remains.

**KEY WORDS:** Vertical discrepancy, Intra-articular derangement, Condylar cartilage, Craniofacial growth, Rat.

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