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Malanie K. Wang, Peter H. Buschang, Rolf Behrents (2009) Mandibular Rotation and Remodeling Changes during Early Childhood. *The Angle Orthodontist*: Vol. 79, No. 2, pp. 271-275.

Original Articles

## Mandibular Rotation and Remodeling Changes during Early Childhood

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### Abstract

**Objective:** To describe the mandibular rotation and remodeling of younger children.

**Materials and Methods:** The sample included 43 males and 43 females who participated in the Bolton-Brush Growth Study at Case Western Reserve University in Ohio. They were chosen on the basis of having Class I (n = 45) or Class II (n = 41) molar relationships and longitudinal lateral cephalograms at three developmental stages of the dentition: late primary (T1: 5.7 ± 0.5 y), early mixed (T2: 8.4 ± 0.6 y), and full permanent dentition (T3: 15.4 ± 0.5 y). Each subject's cephalograms were traced and four landmarks were digitized. Cranial base and mandibular superimpositions were performed with the use of natural reference structures.

**Results:** Yearly rates of true rotation, apparent rotation, and angular remodeling showed significant ( $P < .05$ ) changes throughout. True rotation was moderately correlated with angular remodeling and apparent rotation. Although no significant sex differences in annual rates of rotation were noted, subjects with Class I molar relationships showed significantly more angular remodeling from T2-T3 than did subjects with Class II molar relationships. Rates of true forward rotation were significantly greater with T1-T2 than with T2-T3 (1.3 and 0.7 degrees/y, respectively).

**Conclusion:** Although significant amounts of true mandibular rotation and angular remodeling occur during childhood and adolescence, true rotation is greatest during the transition from late primary to early mixed dentition. (*Angle Orthod.* 2009;79; )

**Keywords:** [Rotation](#), [Mandible](#), [Early childhood](#), [Reference data](#)

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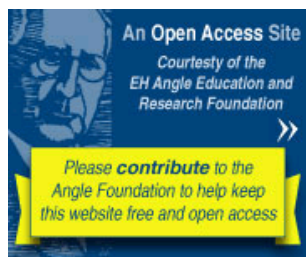
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