

AAO Foundation Award Final Report

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Secondary Investigators	
Award Type	Biomedical Research Award
Project Title	Class III Clinical Trial: Maxillary Protraction Therapy
Project Year	1999
Institution	University of California at Los Angeles (UCLA)
Summary/Abstract	<p>The purpose of this Controlled Randomized Clinical Trial (RCT) was to quantify the effects of maxillary protraction with or without palatal expansion. 46 children aged 5 to 10 years were randomly assigned to 1 of 3 groups: (1) facemask with palatal expansion, (2) facemask without palatal expansion, and (3) observation for 12 months. Cephalometric analysis with traditional cephalometric measurements, an x-y coordinate system, and an occlusal-plane analysis were used. Student <i>t</i> tests showed no significant differences ($P > .05$) between expansion and nonexpansion groups in any measured variables. Comparisons of treated and control subjects showed significant ($P < .01$) treatment effects beyond normal Class III growth. Analysis of x-y coordinate variables showed the following: 2 mm additional forward displacement of the maxillary complex with counterclockwise rotation, mandibular clockwise rotation, posterior movement of B-point by an average of 1.5 mm, and forward movement of the maxillary dentition of nearly 1 mm. Analysis of traditional cephalometric measures showed improvements in ANB angle of nearly 4° and Wits appraisal of nearly 4 mm. The occlusal plane analysis showed an apical base change of 4 mm, 1.5 mm forward displacement of the maxillary complex, mandibular clockwise rotation of 2.5 mm, and forward maxillary molar movement of 1.9 mm. The results of this continuing 5-year clinical trial indicate that early facemask therapy, with or without palatal expansion, is effective to correct skeletal Class III malocclusions.</p> <p>(Am J Orthod Dentofacial Orthop 2005;128:299-309)</p>