

## AAO Foundation Award Final Report

Principal Investigator	Ki Beom Kim DDS, MSD, PhD
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Award Type	
Project Title	Pharyngeal airway volume following maxillomandibular advancement surgery utilizing cone beam computed tomography
Project Year	2007
Institution	Saint Louis University
Summary/Abstract (250 word maximum)	<p><b>Introduction:</b> The purpose of this study was to examine the effects of maxillomandibular advancement(MMA) surgery on the pharyngeal airway volume in the short term and longer term and determine if a relationship exists between the amount of advancement and airway volume change. <b>Materials and Methods:</b> Records of 55 patients who had undergone combined orthodontic treatment and maxillomandibular advancement osteotomies were collected and analyzed. Cone beam computed tomography scans were taken within three days pre-surgery and at least eight weeks post-surgery. The pharyngeal airway volume was measured at pre-surgery (T0), 2-3 months post-surgery (T1), and 4-12 months post-surgery (T2). <b>Results:</b> There was a significant increase in airway volume between T0 and T1 and between T0 and T2. No significant differences were found between T1 and T2. Correlations between the amount of surgical advancement and percentage of volumetric change were confounding and inconsistent between patients. <b>Conclusion:</b> In this study, maxillomandibular advancement osteotomies resulted in a significant increase in airway volume 2-3 months after surgery, and this change appeared to be stable up to one year following surgery.</p>
Were the original, specific aims of the proposal realized?	Yes. We would like to evaluate pharyngeal airway volume following MMA surgery in a larger sample of surgical patients than previously investigated by others and at multiple time points to obtain a more accurate indication of how the airway volume is affected. We confirmed that patients had a significant increase in airway volume following MMA surgery.
Were the results	The manuscripts are in preparation now. It is going to be submitted to

<p>published? If not, are there plans to publish? If not, why not?</p>	<p>American Journal of Orthodontics and Dentofacial Orthopedics pretty soon.</p>
<p>Have the results of this proposal been presented? If so, when and where? If not, are there plans to do so? If not, why not?</p>	<p>It has been presented to postgraduate student at Saint Louis University. After another study about the airflow patterns, particle trajectory, air pressure and velocity changes following MMA surgery, the results will be presented to national and international meetings.</p>