

AAO Foundation Award Final Report

Principal Investigator	Lisa Vecchione, DMD, MDS
Co-Investigator	James Sciote, DDS, MS, PhD, Anthea Rowleson, PhD, Joel Ferri, PhD, MD
Secondary Investigators	Joseph Schuchert, DMD
Award Type	Orthodontic Faculty Development Fellowship
Project Title	Influence of Variations of Masseter Muscle Phenotype on Facial Form
Project Year	2004
Institution	University of Pittsburgh School of Dental Medicine
Summary/Abstract	<p>This study examined the relationship between fiber type composition of masseter muscle and cephalometric measurements of vertical and sagittal dimension to determine the influence of muscle characteristics on craniofacial morphology. Masseter biopsies were obtained on 73 subjects undergoing orthognathic surgery. Four fiber types were identified through myosin antibody staining. Sixteen cephalometric measurements utilizing Dolphin Imaging were used to determine statistical differences between craniofacial classes. A 2 X 3 MANOVA compared how sagittal classification and vertical dimension varied by muscle fiber type characteristics. Muscle fiber morphology was found to be significantly different ($p=.045$) for vertical dimension, but not for Angle classification. These results show a causal link between vertical growth disturbances of the face and a particular muscle fiber type composition.</p>