

2013 AAO Foundation Award Final Report

Principal Investigator	Jose A. Bosio
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Award Type	Orthodontic Faculty Development Fellowship Award
Project Title	Soft tissue changes in response to orthodontic treatment
Project Year	2012
Institution	Marquette University School of Dentistry (MUSoD) – Department of Developmental Sciences / Orthodontics
Summary/Abstract (250 word maximum)	<p>Soft Tissue Facial Measurements and Their Correlation in Orthodontic Patients J.A. BOSIO, J. PRUSZYNSKI, O.M. TANAKA, L. CLOSS, G. JANSON. IADR-2013</p> <p>Objective: The objective of this study was to determine the correlation between upper lip length, mouth width, mouth height, Angle Classification of malocclusion and ethnicity in a random orthodontic patient population.</p> <p>Methods: The sample (226 -94-males/132-females -mean age 15.62+/-5.8) with different ethnicity [142 Caucasians, 32-African Americans (AA), 52-others], was measured with digital caliper using specific soft tissue landmarks. Data was statistically analyzed (Pearson’s, Bonferroni’s – $p < 0.0125$, two way ANOVA). Results: The mouth width to upper lip length measurement correlation coefficient for the total population was 0.21 ($p < 0.0114$) indicating a significant positive linear relationship. Two way ANOVA showed that ethnicity did not affect the relationship between Angle classification of malocclusion groups and upper lip length. For all other ethnicities combined, there was a significant negative linear relationship between mouth height and upper lip length ($p < 0.0065$). A significant correlation between mouth height and mouth width ($p < 0.0042$) for the entire group. The inter-labial gap and upper lip length showed a significant negative correlation for the Caucasian group ($p < 0.0096$) and for all other ethnicities combined ($p < 0.0069$). Conclusion: Orthodontic patients showed significant positive correlation between mouth width and upper lip length indicating that the narrower the mouth the shorter the upper lip length in this Caucasian orthodontic population. Angle classification of malocclusion did not show any correlation with soft tissue measurements. Mouth height and mouth width only showed significant correlation for the entire combined sample. And, as expected, upper lip length and inter-labial gap showed that the shorter the upper lip the greater is the inter-labial gap.</p>
Were the original, specific aims of the proposal realized?	This project is ongoing. Soft tissue measurements have been taken from 445 plus patients, and continue to be acquired from new incoming MUSoD orthodontic patients. Our target is to collect measurements from 500 to 1000 patients.

<p>Were the results published? If not, are there plans to publish? If not, why not?</p>	<p>Mollov N, Bosio JA, Pruszynski J, Wirtz T: Intra and inter-examiner reliability of direct facial soft tissue measurements using digital calipers. Journal of the World Federation of Orthodontists 1 (2012) e157ee161.</p> <p>Soft Tissue Facial Measurements and Their Correlation in Orthodontic Patients J.A. BOSIO, J. PRUSZYNSKI, O.M. TANAKA, L. CLOSS, G. JANSON. IADR-2013. Seattle, WA</p> <p>Payne M, Bosio JB, Wirtz T, Pruszynski J: Photogrammetric reliability of facial soft tissue landmarks. Master Thesis defended 03/2013. Manuscript in preparation for publication.</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>The results from this investigation has been presented at the 2012 AAO in Hawaii as an e-poster format, as well as published (see reference above). Another investigation was presented as a poster format at the 2013 IADR meeting in Seattle, WA. Two other projects are being developed from this database. A master thesis of Dr. Peter Longo, where we are observing changes to the soft tissue before and after palatal expansion. Dr. Audrey Long will also work on her Master Thesis using the data collected in this study.</p>
<p>To what extent have you used, or how do you intend to use, AAOF funding to further your career?</p>	<p>The majority of AAOF funds have been used to support my faculty salary, as well as to pay for some travel expenses related to my work at MUSoD, when these expenses are not reimbursed by my institution. The tenure track in the academic setting is demanding, and it prevents us from investing time to create new money income. These funds are essential to support my family of 4 daughters. Without AAOF support it would be extremely difficult to maintain myself exclusively in academics. I really hope that the AAOF finds enough resources to continue funding my research, since this year I was denied fellowship based on technicalities.</p>