

AAO Foundation Award Final Report

Principal Investigator	Samir E. Bishara
Co-Investigator	
Secondary Investigators	Leigh Von Wald
Award Type	Research
Project Title	Changes in Root Length from Early to Mid-adulthood in a Normal Untreated Population. A Longitudinal Study.
Project Year	1997
Institution	University of Iowa – College of Dentistry
Summary/Abstract (250 word maximum)	<p>A significant number of adults are seeking orthodontic treatment, therefore, it is important to determine the normal changes in root length (resorption or apposition) that occur at this stage of maturation, specifically between early and mid-adulthood. The purpose of the study is to determine on a longitudinal basis the changes in root length between 25 and 45 years of age in a normative untreated population. Two sets of complete mouth surveys were available at early and mid-adulthoods, on a total of 26 subjects (12 males and 14 females). Each set consisted of at least 18 periapical radiographs. On each set of radiographs, the roots of 28 teeth were measured including incisors, canines, premolars, first and second molars, in both the maxillary and mandibular arches. Root length was measured as the perpendicular from the root apex to a line connecting the mesial and distal points of the cement-enamel junction of each tooth. A total of 1456 teeth (1664 roots) were measured. 672 in males and 784 teeth in females. Allowable intra-and-inter-examiner measurements variability was predetermined at 0.5mm. Paired and Student t-tests were used to determine: a) whether significant changes occurred with age; also b) whether there were differences between males and females for the incisors, canines, premolars and molars and c) between the right and left sides. Statistical significance was predetermined at $p \leq 0.05$. The present findings indicate that there were no significant changes in root length for all tooth types evaluated between 25 and 45 years of age, in both males and females. These findings are important for the orthodontist to recognize since they provide some assurance that there is no systematic shortening of root length between early and mid-adulthood.</p>
Were the original, specific aims of the proposal realized?	Yes
Were the results published? If not, are there plans to publish? If not, why not?	Yes. The results were published in the AJODO. Bishara SE, Von Wald L and Jakobsen JR. Changes in root length from early to midadulthood; Resorption or apposition? Am J Orthod Dentofac Orthoped 115(5): 563-568, 1999.
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?	Yes. The results were presented in an International Conference in Athens, Greece in October 1999.