

Research Aid Award

Dr. Fatemah Husain, *University of Buffalo*

Dr. Fatemah Husain is currently a second-year orthodontic resident at the University at Buffalo School of Dental Medicine. She obtained her Bachelor of Medical Sciences and dental degree from Kuwait University. She then completed a General Practice Internship at the Ministry of Health prior to joining Kuwait University as a clinical instructor in orthodontics. Since beginning her Advanced Education in Orthodontics, Dr. Husain has developed a compelling interest in the advances in clear aligner therapy (CAT). More specifically, Dr. Husain is interested in the influence of Invisalign's precision bite ramps position on deep bite correction and root length in adults.



Deep overbite is a common malocclusion, representing 15 to 20% of the US population. Treating deep bites with aligners has been perceived as more difficult due to the patient's natural biting force aiding in posterior intrusion. Invisalign, initially introduced the G5 protocol to correct deep bites and recently introduced the G8 protocol for improved deep bite correction. However, advantages in using CAT in such cases include that there is no wait time necessary to level the curve of Spee with mandibular incisor intrusion. This contrasts with multi-edgewise fixed appliances, where the clinician typically waits until some initial leveling and aligning is achieved before placing the reverse curve arch wires. Bracket interferences can also cause delays in leveling the curve of Spee with fixed appliances. The Invisalign G5 protocol was found to be effective in correcting skeletal deep bite, possibly resulting from the effectiveness of the bite ramps in dis-occluding the posterior teeth, allowing more buccal extrusion than would have otherwise been possible. Yet, precision bite ramp (equivalent of bite turbos) placement varies among clinicians for speech articulation reasons or personal preferences. To our knowledge, there is no established protocol for the placement of precision bite ramps and no available research analyzing the influence of precision bite ramp position on treatment outcomes, thus, this research project is particularly timely and relevant.

The generous funding from the AAOF of this research project will offer the orthodontic profession insight into the influence of Invisalign's precision bite ramps position on deep bite correction. To our knowledge, this will be the first study to investigate the effects of Invisalign's precision bite ramp's location on bite opening and root lengths in adults with deep bite malocclusions. Through our work, we hope this project will offer orthodontists the information needed to guide their clinical decision making and management of adult patients with deep bite seeking treatment with clear aligners. This opportunity provided by the AAOF plays a vital role in helping Dr. Husain further her experience in her research journey for a future career in academia.