

## Correlation between Cephalometric Measurements and Visual Perception of Facial Profile in Skeletal Type II Patients

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**Abstract :** The objective of this study was to find a correlation between cephalometric measurements and visual perception of facial profile in skeletal type II patients. In this study, 250 lateral cephalograms of female patients from age, 20 to 22 years were analyzed. The profile outlines of all the samples were hand traced and transformed into silhouettes by the principal investigator. Profile ratings were done by 9 orthodontists on Visual Analogue Scale from score one to ten (increasing level of convexity). 37 hard tissue and soft tissue cephalometric measurements were analyzed by the principal investigator. All the measurements were repeated after 2 weeks interval for error assessment. At last, the rankings of visual perceptions were correlated with cephalometric measurements using Spearman correlation coefficient ( $P < 0.05$ ). The results show that the increase in facial convexity was correlated with higher values of ANB (A point, nasion and B point), AF-BF (distance from A point to B point in mm), L1-NB (distance from lower incisor to NB line in mm), anterior maxillary alveolar height, posterior maxillary alveolar height, overjet, H angle hard tissue, H angle soft tissue and lower lip to E plane (absolute correlation values from 0.277 to 0.711). In contrast, the increase in facial convexity was correlated with lower values of Pg. to N perpendicular and Pg. to NB (mm) (absolute correlation value -0.302 and -0.294 respectively). From the soft tissue measurements, H angles had a higher correlation with visual perception than facial contour angle, nasolabial angle, and lower lip to E plane. In conclusion, the findings of this study indicated that the correlation of cephalometric measurements with visual perception was less than expected. Only 29% of cephalometric measurements had a significant correlation with visual perception. Therefore, diagnosis based solely on cephalometric analysis can result in failure to meet the patient's esthetic expectation.

**Keywords :** cephalometric measurements, facial profile, skeletal type II, visual perception

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