## COMMENTARY

## Emergence Angles of the Cementoenamel Junction in Natural Maxillary Anterior Teeth<sup>1</sup>

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Understanding the emergence angles when fabricating direct and indirect restorations provides important insights for creating appropriate gingival health and soft tissue profiles. Emergence angles that are excessive may not allow access for oral hygiene and compromise gingival health. On the other hand, emergence angles that are inadequate may not provide adequate tissue support leading to esthetic concerns of aberrant facial gingival architecture and open gingival embrasures.

In this study, the authors created an innovative protocol to analyze the emergence angles of the cementoenamel junction of natural teeth. They utilized a 3D scanner to analyze the shape and appearance of natural teeth. Evidence-based studies examining the precise geometric value of the emergence angle are rare, but this study collected extensive data by measuring maxillary anterior teeth on the facial, palatal, mesial, and distal aspects. The results indicated that of the emergence angles for 148 teeth showed the angle to be within a narrow range from 11.3° to 15.26° regardless of the tooth location.

The clinical importance of this study may provide the technician or clinician with "benchmark" data when fabricating or evaluating contour parameters. The raw data, however, are difficult to apply to clinical parameters, because it was not directly correlated with clinical outcomes. The logical assumption seems to infer clinical correlations but that is only speculative and not evidence based, and the range of clinical variability potentially adds to the complexity of this subject. For example, the angulation of the tooth in the alveolar housing may vary, and proximal relationships may change the impact of emergence angles. Teeth with root proximity may therefore be more critical when evaluating emergence angles, while teeth with diastemas seem to be more amendable to changes in emergence profiles to close open gingival embrasures. Clinically, it is possible to change the emergence angles of restored teeth that do not mimic those of natural teeth to close open gingival embrasures and still obtain a favorable gingival health outcome. The periodontal phonotype and patient's oral hygiene compliance are also clinical variables.

It therefore remains difficult to apply a strict formula for emergence angles to clinical application, even though the data on natural teeth are evidence based. The ultimate goal is to provide the necessary guidance that will aid the clinician in fabricating predictable restorations that have access for oral hygiene, do not create excessive mechanical pressure, and satisfy the patient's esthetic concerns. As the authors indicated, interpretation of their results must be made with caution, and clinical correlations are still premature.

## REFERENCE

1. Du J-K, Li H-Y, Wu J-H, et al. Emergence angles of the cementoenamel junction in natural maxillary anterior teeth. J Esthet Restor Dent DOI 10.1111/j.1708-8240.2011.00471.x.

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