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Establishing Clinically Acceptable Threshold for Pink and White Esthetics Scores

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ABSTRACT

Objectives: The esthetic success of single-tooth implant restorations (STIR) requires an objective tool such as one devised by Belser et al., 2009 - pink esthetic scores and white esthetic scores (PES/WES). This study aims to (1) establish a threshold for PES/WES, based on the detectability of STIR by laypeople (2) establish a threshold for PES/WES based on the acceptance rate of STIR by laypeople (3) study the pink and white deficiencies in relation to the detectability (4) study the difference in the ability of laypeople and dentists in detecting STIR. **Methods**: Thirty-eight photographs of STIR in the esthetic zone were given PES/WES scores by 3 evaluators. The photographs were distributed to 100 laypeople and 60 dentists to identify the STIR and provide reasoning. Then, the participants were asked if the STIR was acceptable. Receiver Operating Characteristics (ROC) analysis was utilized to determine the threshold. **Results**: At the PES/WES score of 17, 71 laypeople unable to identify the STIR, and at the score of 12, 80 laypeople accepted the implant. Out of 3,800 occasions, laypeople correctly identified the STIR 1,770 (46.58%) of those occasions; 751 (42.43%) of those occasions were correctly identified with pink deficiencies and 1019 (57.57%) of those occasions with white deficiencies. In comparison to the layperson group, out of 2,280 occasions, dentists correctly identified STIR 1,869 (81.97%) of those occasions. **Conclusion**: The PES/WES score of 12 indicates the clinically acceptable threshold while the score of 17 indicates the detectable threshold for an exceptional esthetic outcome. For both laypeople and dentists, root convexity/soft tissue color and texture are the most focused criteria of pink deficiencies, while overall white deficiencies remain influential. Compared to laypeople, dentists tend to have a higher ability to detect STIR.

Keywords: single-tooth implant restoration, pink esthetic score, white esthetic score