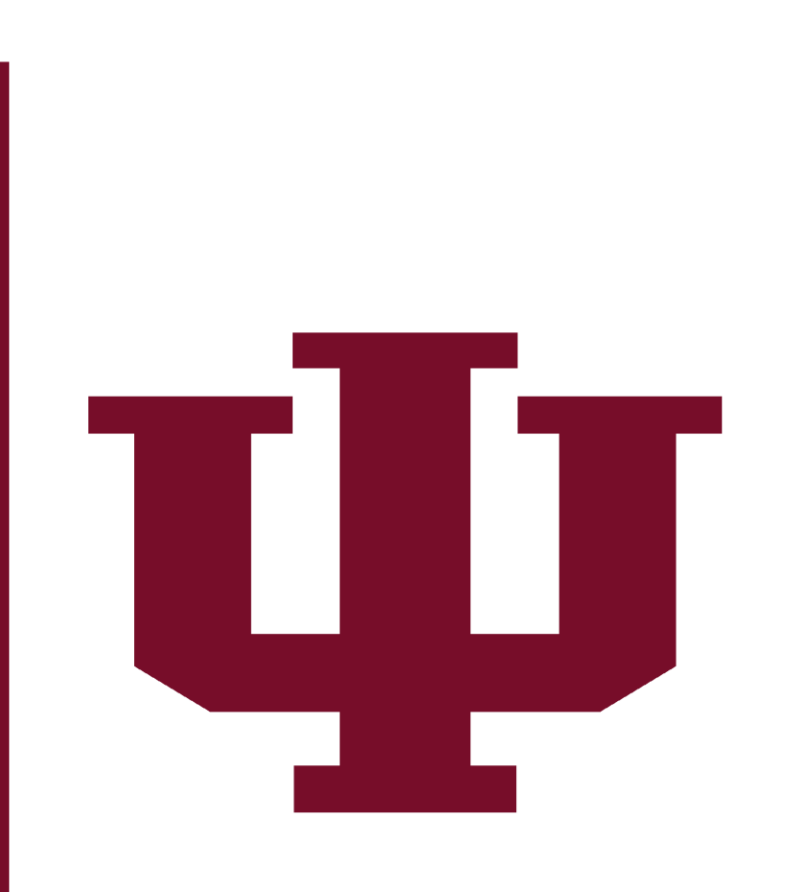




Application of 3D Facial Scan in Digital Smile Design: A Clinical Report

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ABSTRACT

3D facial scan has been gaining popularity in Dentistry. Incorporating 3D facial scan in digital smile design allows for more realistic simulation and visualization of treatment outcomes. The purpose of this clinical report is to show the digital workflow utilizing 3D facial scan, intraoral scan, and CAD/CAM software to facilitate digital smile design to treat the patient with high demand esthetic outcome.

A 62-year-old female patient presented with very bulky and buccally maxillary and mandibular anterior crowns #6-11 and #22-27 with too opaque color. The treatment plan was to replace all maxillary and mandibular anterior crowns. Digital data was acquired by an intraoral scanner (Straumann) and a 3D facial scanner (Bellus 3D). The intraoral scan and facial scan were merged together to create a 3D virtual patient. Then, teeth alignment, teeth preparation, and teeth wax-up were performed virtually. The 3D digital smile design was presented to the patient for approval. After removing all previous crowns, prepared teeth were scanned to make long-term provisional crowns to confirm the final outcome before fabricating the final restoration.



1st Clinical Appt

Pre-treatment



Laboratory

Facially Driven Wax-up



2nd Clinical Appt

Tooth Preparation and IOS



Laboratory

3DP Interim Prostheses

Patient consent form to disclose identifiable information is on file



3rd Clinical Appt

Long-term Interim Prostheses confirming clinical outcomes



RESULTS

This technique could be used when patients present with pre-existing restorations that prevent clinicians from a traditional analog mockup. Utilizing intraoral scan and 3D facial scan combining with digital smile design seems to be an alternative to present possible treatment outcomes to patients, as well as can be used as an effective guide for treatment in esthetic zones.

REFERENCES

Lin WS, Harris BT, Phasuk K, Liop Dr, Morton D. Integrating a facial scan, virtual smile design, and 3D virtual patient for treatment with CAD-CAM ceramic veneers: A clinical report. *J Prosthet Dent* 2018;119(2):200-5.