

A Revolution Technique

Digital Smile Design: A Revolutionary Technique In Cosmetic Dentistry

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Abstract

Digital designs involve patient involvement in designing their own smiles, allowing for customization of smile designs based on individual needs and preferences that complement the morpho-physiological characteristics of the patient. This emotional connection with the patient increases their trust in the process and improves their acceptance of the planned treatment. This article is an attempt to highlight some important aspects of digital smile designing.

INTRODUCTION

Everyone wants to have a gorgeous, self-assured smile. A physician can utilize the Digital Smile Designing (DSD) tool when a patient wants that smile but is hesitant to undergo the treatment procedure since they are unable to see their treatment outcome. The DSD concept is to assist clinicians by enhancing the aesthetically pleasing representation of the patient's concern, providing comprehension of the potential remedy, and educating and inspiring them about the advantages of the treatment. This will lead to an increase in case acceptance. By achieving a simulation and previsualization of the final outcome of the suggested therapy, digital smile design is a digital mode that aids in the creation and projection of the new grin design.

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Evolution of Digital Smile Designing

The design of smiles has gradually transitioned over the past 20 years from physical analogue to digital designing, which has gone from 2D to 3D. It has advanced to fully digital drawing using DSD software on the computer from the previous times when hand drawing on printed images of the patient was utilized to convey and explain to the patients how the eventual result will look like. This can be

readily altered, done, and undone at any time to reach the final design that balances the patients' functional and aesthetic needs.

DSD Specifications

The DSD approach is performed with digital equipment that is already common in dentistry practices today, such as a computer running DSD software, a digital SLR camera, or even a smart phone. For a full digital 3D work flow, other equipment include a 3D printer, CAD/CAM, and a digital intraoral scanner for digital impressions. A video documentation is needed for a dynamic analysis of teeth, gingiva, lips, and face during smiling, laughing, and talking in order to incorporate facially guided principles into the smile design. Accurate photographic documentation is crucial because complete facial and dental analysis depends on preliminary photographs on which changes and designing are formulated.

DSD Software Categories

Any of the available software may be used by the clinician.

1. Photoshop CS6 (Adobe Systems Incorporated),
2. Microsoft PowerPoint (Microsoft Office, Microsoft, Redmond, Washington, USA).
3. Smile Designer Pro (SDP) (Tasty Tech Ltd),
4. Aesthetic Digital Smile Design (ADSD - Dr. Valerio Bini),

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5. Cerec SW 4.2 (Sirona Dental Systems Inc.),
6. PlanmecaRomexis Smile Design (PRSD) (Planmeca Romexis®),
7. VisagiSMile (Web Motion LTD),
8. DSD App by Coachman (DSDApp LLC),
9. Keynote (iWork, Apple, Cupertino, California, USA)
10. Guided Positioning System (GPS)
11. DSS (EGSolution)
12. NemoDSD (3D)
13. ExocadDentalCAD

Advantages

The predictability of the treatment is increased since digital imaging and designing make it easier for patients to picture the desired outcome before the actual treatment begins. By inspiring and informing patients about the advantages of the treatment, the practitioner can allay their worries by digitally displaying the outcome. The aesthetic visualization of the patient's problem through digital analysis of facial, gingival, and dental characteristics that will evaluate the smile and the face in an objective and standardized manner improves clinician diagnosis and treatment plan.

DSD results in customized smile designs by boosting patient involvement in their own smile creation, which produces a more smile that is emotionally charged, emotionally driven, and humanistic. The patient may assess, comment on, and accept the finished form of the fresh smile prior to any therapeutic operations being carried out, so improving the satisfaction of patients. After treatment, there is no room for regret because once an irreversible surgery has been done, it cannot be reversed undone. Evaluation and comparison of pre-and post-treatment results are also helpful changes. Easy sketches and reference lines with the digital rule pictures taken before and after therapy can be compared.

Limitations

Since photographic and video recordings are essential to the diagnosis and treatment plan, their deficiency could alter the reference image and lead to erroneous diagnosis and planning. The full 3D digital workflow is economically expensive because it calls for 3D software with updates, an intraoral scanner, a 3D printer, and CAD/CAM.

Specific software requires training and handling, which adds to the time and expense.

Future Prospects

When more and more clinicians use digital scanners, 3D printers, and CAD/CAM, the necessity for time-consuming plaster and wax casts and impressions will diminish significantly. However, complete 3D digital workflow is still not widely used and may one day be widely employed in healthcare. By superimposing CT or Cone Beam scan files, 3D files from an oral impression or a facial scan, and photos and scans of the patient's face, it will be feasible to address facial aesthetics in complex cases where implants need to be implanted. Additionally, the 4D concept, which allows motion to be added to the smile design concept, may be used. A future when a digitally generated smile can be projected into virtual reality glasses to foresee the desired smile in actual reality may not be too far off thanks to rapidly improving technology.

CONCLUSION

A helpful tool for the visually appealing representation of a patient's issue is the Digital smile design concept. It enhances the clinician's diagnostic and treatment planning in addition to assisting patients in visualizing the results of their treatments.

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