

## Achieving Predictable Esthetics in Smile Design – *Going the Digital Way*

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The backbone of any indirect restorative procedure in dental practice is the efficiency of communication between the restorative dentist and the dental lab. However this communication is not always easy to achieve. There are still a number of gaps in the typical doctor-technician communication process. The dental surgeon might miss helpful information in their instructions. On the laboratory side, some dental technicians might struggle with effectively conveying the dental surgeon the information required by them<sup>1</sup>.

The high esthetic demands of patients in current times tests the communication skills between doctors and their dental technicians. Patients expect a smooth process in the dental office with highly aesthetic results. These factors make importance of communication between the dentist and the laboratory even more pertinent.

In this era of digitalization, more and more dental labs are upgrading their technology. This has witnessed an increase in milled technology (CAD-CAM) in various fields like crowns and bridges, inlay and onlays, laminates, implant frameworks and even milled complete dentures.<sup>2</sup>

The restorative dentist should take maximum advantage of these designing softwares to convince patients more efficiently and provide better care.

### Steps in CAD Designing for Predictable Anterior Esthetics (exocad Dental CAD GmbH, Germany)

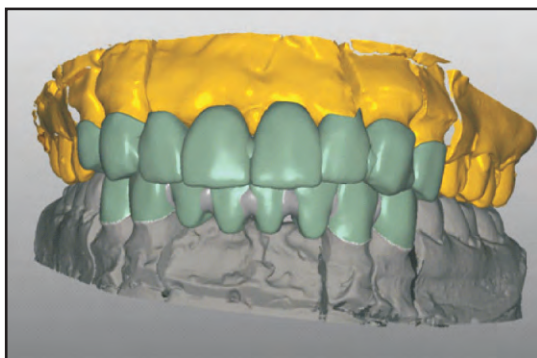
1. Diagnostic impressions of both arches are made in elastomeric impression material to obtain multiple models of both arches.
2. Record the bite of the patient with bite registration material preferably silicone based.
3. Mock preparation of the abutments is done on the diagnostic model.
4. Send the prepared diagnostic model along with the bite record to the lab.
5. The lab scans both the models as well as the bite and virtually articulates it by software (Figure 1).
6. The lab designs the restoration on CAD and mails the file to the dentist. (Figure 2)
7. The dentist can suggest any changes in form if required.
8. This file can be mailed to the patient and also a coloured print out can be given.



**Figure 1:** Scanned diagnostic model with mock preparation of abutments

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**Figure 2:** Computer Aided Design (CAD) of the prosthesis

9. The approved restoration can be fabricated in millable Poly methyl methacrylate (PMMA) blocks.
10. This virtually planned restoration can be shown to the patient in physical form before any other procedure is done and suggestions of patient can be considered.
11. The CAD – CAM fabricated PMMA prosthesis can be used as provisional restoration and also aids in tooth preparation of the abutments.
12. This clears the doubts of the patient and eliminates the fear regarding the form of anterior esthetics that the he/ she will receive (Table 1).

**Conclusion :**

Every dental surgeon practicing restorative dentistry strives to deliver an esthetic prosthesis. However the patient might have different expectations and may require a few modifications. By working as a team, and utilizing digital tools designed to facilitate collaboration, dentists and dental technicians can provide patients with the best in restorative outcomes.

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**References :**

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**Table 1 :**Advantages of Digital Planning

FOR DENTIST	FOR THE PATIENT	FOR THE DENTAL LAB
Better restoration design	Can visualize the restoration prior to any procedure	Better communication with the dentist ensuring his faith
Ease in patient convincing	Can give suggestions for any particular change desired	The lab knows what the dentist and patient desires
The dentist knows what lab will deliver	Cost effective and time efficient	Lessens repetitions as everything is preapproved