

INTRAORAL SCANNING

A Great Resource in Today's Dentistry

by **Moritz Zimmermann, DDS**

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in Switzerland—the place where CEREC was invented 30 years ago by professor Werner Mörmann. Zimmermann specializes in CAD/CAM dentistry and loves to share his knowledge in international training courses and lectures for both undergraduate and postgraduate colleagues. In 2015, he was the visiting assistant professor at the University of Michigan Dental School.

Currently, Zimmermann runs a blog, zDigitalDentistry.com that informs dentists all over the world about the great potential of digital dentistry.

Currently, dentistry has two opposing trends: going digital or staying conventional.

What is your preference? More importantly, how did you make that decision? Are you fully aware of the advantages of intraoral scanning?

Since my first steps within the dental world, digital dentistry has been my great passion. And I am increasingly fascinated by this technology and its possibilities for dentists.

Going digital starts with implementing intraoral scanning systems. From there, several different digital procedures can create a fully digital workflow. I believe a fully digital workflow ensures the best treatment option for our patients and, fortunately, is also the most economical.

Benefits

Compared to taking conventional impressions, intraoral scanning offers several advantages. Instead of fabricating a plaster model, an intraoral scanning system provides a digital data set that is the basis for further treatment. Working with this digital data set will help you perform better dentistry. Here are some benefits.

What you see is what you get. Most of you probably have had this experience: You made a lot of effort to take a really perfect conventional impression, you placed the cords perfectly and you ensured perfect bleeding control. Your impression even looks nice, at

first view. However, a day later you receive a phone call from your lab technician, who says, “Sorry doc, the plaster model shows a gap directly around the preparation margin. You’ll have to do it again!”

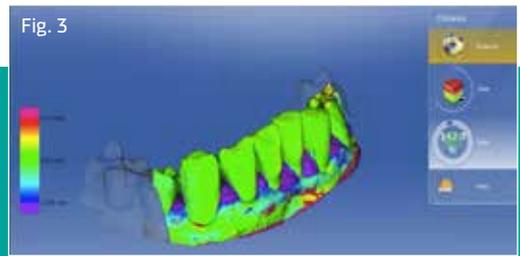
Taking intraoral scans will help you to avoid those annoying calls. By using intraoral scanning systems, what you see really is what you get. You can perform quality analysis directly out of the digital model on the computer. You can even digitally check the proper reduction of tooth substance. That is a huge advantage, isn’t it?

Save more time by being efficient. Let’s go back to the situation in which your conventional impression is not perfect and you have to redo it. Taking the setting and mixing times into account, this could take up to 10 minutes: a lot of time in everyday practice.

Now think about how much time it would take with an intraoral scanner. Maybe two to three seconds. You don’t even need to re-scan the full jaw—you can limit your scan only to the affected area. That will definitely save you a lot of time in everyday practice.

When using intraoral scanning systems, you will no longer need to disinfect and clean your dental impressions and impression trays—a very time-consuming step. Moreover, do you always choose the best-fitting impression tray for your patient? By using intraoral scanning systems, you will no longer have to deal with finding some sort of workaround.

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The disinfection procedure for intraoral scanning systems is really easy and fast. You can even use a disposable plastic protective sleeve for each patient. And there is no need to store different-sized impression trays. There is only one scanning tip for each patient. And when used properly, it will scan every patient perfectly.

No more plaster. Going digital finally means getting rid of all those plaster models. This will be a crucial, advantageous step in your practice.

First, digital models will never show any wear, destruction or deformation over time. Second, storing digital models is very efficient. Instead of renting a separate plaster-model room in your practice, simply store your patients' models digitally on your hard drive. This allows you to quickly find your patients' older models: Simply push the search button instead of going to the archive.

Better communication. Have you ever dreamed about being more persuasive in communicating with your patients? Have you ever dreamed about better ways to enlighten your patients about their current or future treatments? There is no easier way than convincing them digitally. Just take a scan and show it to them on the screen.

At Zurich University, we have developed a special software tool that allows us to virtually

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analyze the patient by using intraoral scans. We are able to easily do several analyses such as tooth migrations, tooth rotations, recessions and abrasions.

We simply match the patient's baseline and follow-up scans. One click later we can see exactly what is going on, and we can tell the patient when it will be necessary to intervene. Believe me—this is a great step forward and bears huge potential (Figs. 1-3).

Doing it "the chairside way." Thirty years ago, my mentor, the visionary professor Werner Mörmann, invented the CEREC system—the first chairside CAD/CAM system.

He strongly believed in this treatment option for the patients' benefit. Every day

that I treat my patients chairside—whether it's with crowns, bridges or even with highly esthetic veneers—I still feel deeply impressed by this great treatment option. And what is the first step for doing it the chairside way? Yes, you are right: taking an intraoral scan.

The advantages for a chairside treatment are numerous, and include immediate dentin sealing, immediate stabilization of tooth substance, and no bacterial leakage often caused by a badly fitting provisional. And it is my conviction to always treat the patient the best way possible. So, why not do it the chairside way (Figs. 4-6)?

Conclusion

Today, there is no doubt about the possibilities and potential of digital impression-taking. The past few years have seen a tremendous increase in the offer of intraoral scanning systems available on the market.

On the strength of numerous innovations and a wider range of indications in the fields of orthodontics and implantology, intraoral scanning systems appear to be a highly promising development for the future.

So, what do you prefer: going digital or staying conventional? For me there is only one choice. Digital dentistry will change dentistry as we know it today—and it is time to go digital. ■