Witnessing the evolution of digital impression solutions

An interview with digital-scanning pioneer Dr. Svend W. Carlsen

Since 1982, Dr. Svend Carlsen has used various differing intra-oral scanners for taking impressions digitally. The 3-D scanner company 3Shape spoke with Carlsen about developments in digital impression systems and how technology can help dentists in their daily work. Following are some of Carlsen’s comments.

How did you get started with digital imaging?

“It all started with a digital chairside solution, where we had both the technology to digitally record the tooth and the milling equipment to manufacture the crown.

In the beginning, we were all very enthusiastic about the new technology, but we discovered that results lacked the required accuracy. We were forced to regard our ceramic inserts only as well-functioning mega-fillers. Since then I have been constantly searching for a digital system that could meet the accuracy challenge.

How would you describe the status of that search today?

A little over a year ago, I attended an event that included a demonstration of 3Shape’s TRIOS system.

This experience renewed my belief that digital imprint technologies could, in fact, fulfill our needs.

Today we use the 3Shape TRIOS system for most of our impressions in the clinic for single-tooth crowns and bridges.

What do you demand of a reliable digital system?

With most of the digital impression systems that I have used, there has been a need to make small corrections before the final crown could be placed in the patient’s mouth. This should not be necessary.

It is also now a great benefit to be able to view an enlarged image of the prepared tooth, with every detail clearly displayed. This enables you to identify and immediately correct areas where the tooth preparation is not sufficiently smooth or sharp.

This level of control means that only correct information is sent to the laboratory. It also provides effective control of our own work.

Patients are rather impressed that we can take an impression so quickly and so easily. I think that the high degree of control that dentists can demonstrate with the technology creates a greater sense of security for patients. Patients can follow their own treatment’s details on the screen and thus better understand what it entails.

How does the new system compare to the earlier devices you have tried?

Previously, you had to apply spray or powder on the teeth before you could scan.

This was very annoying because it’s hard to put an even layer of coating on the teeth — and an uneven layer would ruin scan precision. With previous systems, it was also necessary to maintain a completely steady hand while
scanning. The slightest movement of the patient or of the operator’s hand was enough to create a useless image. The new scanners allow a high degree of movement freedom, and this makes it much easier to get a good picture.

Here at our clinic, assistants scan as often as dentists. The system is very intuitive.

You started with a chairside milling system, but the TRIOS system you use today builds on cooperation with the lab. How do you view these different approaches?

I know from my own experience that it is a difficult task for many dentists. But in reality, at least as the technologies stand today, chairside milling is not worth the investment because dentists need to spend too much time perfecting the esthetic details. In relation to my business, I have no doubt that it’s better for me to outsource my milling needs. More importantly, skilled dental technicians will usually provide better restorations than dentists can. They are simply better artists and have more practice.

Have digital impression solutions come to stay?

I think that the existence of digital impression solutions in all clinics will soon be taken for granted. Even in a little town such as ours, all four dental clinics are equipped with their own digital impression system.

Actually, we find that our area’s high-tech profile affects competition because it helps us attract patients from other cities.

We also see a clear trend among laboratories. More and more labs are working with advanced digital systems that allow them to mill crowns directly from our digital impressions — without first manufacturing a model. This means that we can get our crowns back from the lab even faster.

Registration material earns 5 stars

R-SI-LINE METAL-BITE has been a dentist for more than 50 years and has always actively taken interest in the most advanced technologies within the dental profession. Today, Carlsen runs his Herregaard Center Dental Clinic in Faaborg, Denmark. The clinic uses the 3Shape TRIOS digital impression system on a daily basis.

METAL-BITE received a clinical rating of 96 percent from the evaluators, while 93 percent of the evaluators would recommend the material. After a decade since its introduction, METAL-BITE is well-known to a growing number of dentists in many countries throughout the world. The material has become a standard for universal registrations, although the material is also indicated for a broad variety of indications. The product boasts a number of beneficial physical properties, including: very good handling, short setting time and easy-to-trim-and-polish silicone. The dark gray METAL-BITE is also scanable (powderfree) for CAD/CAM applications, it is ideal for the biteplate and facebow registrations.

For more information, you can contact the manufacturer directly: R-dental Dentalerzeugnisse GmbH is based at Winterhuder Weg 88, 22085, Hamburg, Germany. You can phone R-dental internationally at +49-40-22757676 or send a fax to +49-40-22757668. You can contact the company via email at info@r-dental.com or visit R-dental online at www.r-dental.com.

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