"Taking the advantages of digital dentistry to a new level"

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3Shape's latest release of the TRIOS® digital impression solution was presented in Chicago Midwinter, where especially the new Shade Measurement and HD Photo features created a stir among dental professionals. The dentist Dr Simon Kold evaluated the new features.

_Already before Chicago, selected dentists were given the opportunity to try out TRIOS® in their own clinics. However, Dr Simon Kold of the Herning Implant Center went even further. Challenged by a difficult tooth discolouration case, he saw a unique opportunity to gauge the shade measurement against the conventional method. In the following interview, Dr Simon Kold spoke about his evaluation procedure and the results.

_How did you evaluate the Shade Measurement feature?

Quite coincidentally, at about the same time I was asked to try out the new feature, I was met with a perfect case that was quite demanding in terms of getting the shades right. A young male patient, with otherwise perfect teeth, had a noticeably discoloured central incisor that he wished replaced. The fact that the case involved a solitary tooth, and it was at the front, put extra stress on achieving perfect shade matching to the existing teeth—so it was just the kind of case I needed to test the digital shade measurement method through a harsh trial situation.

Fig. 1_Before treatment: the patient with a discoloured central incisor.

_Tell us about the actual test.

The beauty of the test lays in its simplicity. Basically, I worked with my lab to create two new crowns for the same treatment, and then compared how each one looked in the patient's mouth. One crown was created using the traditional method I always used before—i.e. by matching the shades manually and sending the found shade values plus patient photos to the lab. The other crown was created using the digital Shade Measurement and HD Photos.

_What were your experiences with using these functionalities?

Shade measurement couldn't be easier, because it happens automatically while I am scanning. All the shades are stored in the impression, and I can display the shade values in the most significant tooth areas which I select. The photo feature is equally easy to use. Just position the scanner tip and snap the picture. In this case, I performed a pre-preparation scan and took an array of the feature to show aesthetic details. After preparing the tooth, I only needed to rescan over the prep area, because TRIOS® automatically merges new scans with the previous pre-preparation scan, saving me loads of time. At this stage, I took additional images to get a clear picture of the margin line area.

[PICTURE: ©SERGEY NIVENS]

_What results did you achieve?

I work with a great lab, and I have always been taken aback by their ability to produce crowns with well-matched shades. Therefore, I was quite eager to see how this crown that was based on the shade measurement would cope against an equivalent shaded in the traditional way. To be honest—both crowns looked fantastic—on the model and in the patient's mouth. However, on very close inspection and under optimal lighting, I noted very slight unintentional shadowing on the traditionally made crowns. So in this particular case—TRIOS® actually came out a slight winner.

_After the application of the measurement, what did you conclude?

Well, first of all, I am very happy to know that I am equipped with a shade measurement solution that saves me an abundance of time and let me achieve results that are at least as good as the slower and less handy traditional method. Just to double-check our findings, we ran a similar test with another patient shortly after—and ended with a similar positive outcome. The great thing about the new features is that they allow me to easily convey more information along with significant details to the lab together with the digital impression—information I capture while I am scanning anyway. In our clinic, we have been taking almost all of our impressions digitally, and the benefits for our business have been enormous. But now, the direction 3Shape is taking by adding other functionalities that one can perform while scanning, is simply taking the advantages of digital dentistry to a new level.

Thank you very much for this interview.

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Fig. 2_Before preparation of the tooth: Dr Kold performed a pre-preparation scan and took HD Photos to capture details about the original situation.
Fig. 3_Scanning after preparation, with an additional HD Photo for easy margin-line detection during design.
Fig. 4_On the TRIOS® screen, selecting the relevant areas on the neighbour incisor brings forth the captured shade values that the lab can use to make a well-matched crown.
Fig. 5_Two crowns created: based on the Shade Measurement (left); based on the traditional shade-matching methods (right).
Fig. 6_Comparison in the mouth: the crown in the top picture is based on TRIOS® Shade Measurement, and crown in the bottom picture is based on the traditional shade-matching methods.
Fig. 7_Seated: the final crown based on the Shade Measurement.

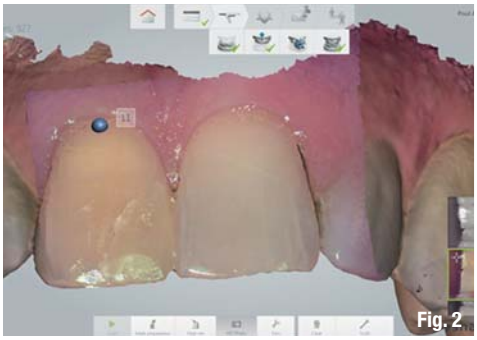
Fig. 2


Fig. 3

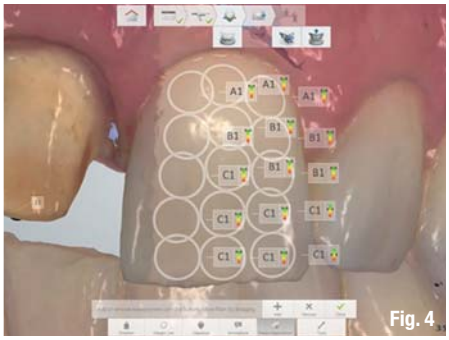
Fig. 4


Fig. 5


Fig. 6


Fig. 7