

First Impressions of the 3M™ True Definition Scanner

by Dr. Adam Schulhof



Dr. Adam Schulhof is a board-certified orthodontic specialist who runs a state-of-the-art

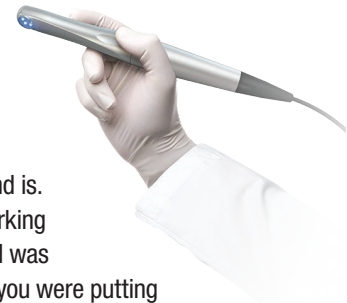
private practice in Oradell, NJ. He's a co-founder of Kindersmiles, a practice that specializes in the use of advanced aesthetic technologies, such as the Clarity™ SL and Incognito™ Appliance Systems. More recently, he established the Center for Cosmetic Orthodontics, a practice that uses digital imaging, advanced computer graphics and other cutting edge technologies to provide aesthetic and customized solutions for his patients. Dr. Schulhof is a recognized leader in the field of lingual orthodontics and lectures frequently in the United States and Internationally. He's actively involved in research and development, continuing to improve and evolve lingual orthodontics. Dr. Schulhof earned his DMD degree from the University of Medicine and Dentistry of New Jersey and was inducted into the Omicron Kappa Upsilon dental honors society. He attended Columbia University for his Orthodontic specialty training. Dr. Schulhof is currently in the process of creating a Lingual Orthodontic Program for many universities in the United States.

Some of us can still recall running around our houses with a paper towel roll making whooshing sounds, imagining a glowing light saber slicing through the air, or Harry Potter's wand shooting spells at imagined evil witches. Lately it seems that both Science Fiction and Fantasy are slowly becoming reality with all the high tech gadgets being created.

Within Dentistry and Orthodontics, we are also finding ways that technology is advancing our field and making our lives and those of our patients easier. Intraoral scanning, once thought of as only fantasy, is one such technology. Imagine a patient sits down in your chair, and instead of mixing up a gloopy tray full of alginate to shove in their mouth, we wave a wand and create a 3-dimensional digital model instantly on the screen. Sounds incredible, but we are finally there! Our office had the opportunity to "play" with the 3M™ True Definition Scanner, and I'd love to share our journey with you.

The Big Day Arrives

The day the crate arrived at the office was like Christmas morning. The whole staff oohed and aahed as the foam and bubble wrap gave way to what we affectionately call R2D2. The sleek touchscreen is nice, but what immediately struck me was how small the wand is. We had experience with an earlier scanner and have working knowledge of many others on the market, and this wand was considerably smaller. It easily made the others look like you were putting a "DustBuster®" in the patient's mouth.



The most important aspect to evaluate was the accuracy of the scan. Our first test was to scan data for Digital Model Storage. We scanned 12 patients and created digital models. In general, the digital models from the scan data looked much better than the old models.

The next step of our evaluation process was to create Incognito™ Appliance System fully customized lingual braces off of the scans. The Incognito appliance is the most customized bracket on the market. The fabrication process relies on complete accuracy and a very specific lab process. We scanned five cases and thus far bonded one case using brackets completely fabricated digitally off of the scans. We then also scanned the patient just post bonding and overlaid the setup (Figure 1A-B).

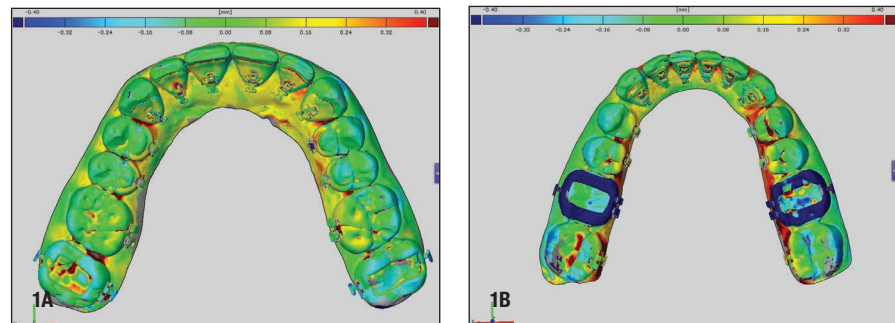


Figure 1A-B



As you can see, the positioning was perfect. In some cases, you can even make out the excess glue in certain areas and saliva around the bracket. Clinically, not only was every bond perfect, in both my eyes and my assistants, we felt that the accuracy was even better. There were times when half occlusal pads were fabricated in the traditional lab method that we felt, upon bonding, created some really small spaces between the occlusal portion of bracket and tooth. With these brackets fabricated by the scan, the tooth and the bracket interface appeared seamless.

Brackets are bonded well, fitting beautifully, and clinically are in perfect position.

Clearly the accuracy of the system measures up well. Let's discuss ease of use. To be honest, in all the excitement everyone wants to get their hands on it and sometimes forgets the learning curve involved. Let me make a statement... It looks easier than it is.

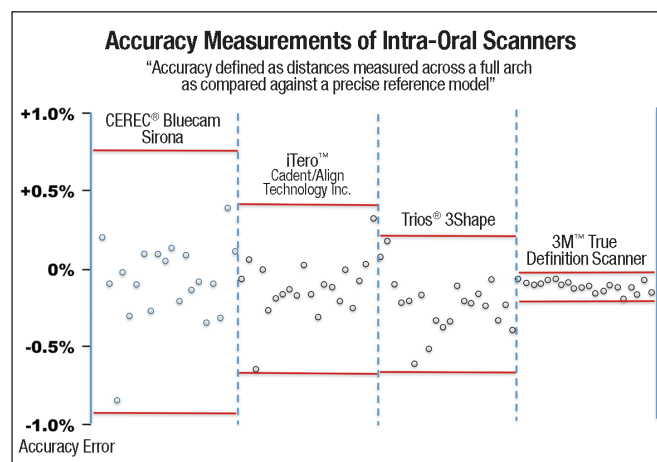
Yes, I'm putting that out there because I want you all to be successful with the scanner as I think it's wonderful for us, our patients and our future. I want to set expectations realistically. At first there are frustrations. This is a technique that we have never done before. In fact, I grabbed that wand like a handpiece and I believe we, as Dentists, are so used to handpieces that our learning curve is more difficult than our assistants. We need to overcome our natural tendency to treat it as a handpiece to allow ourselves to learn the proper procedure. Once we do, then it's just a matter of practice, practice, practice.

My head clinical assistant, Michele, is now scanning patients' full upper and lower arches and bite registrations in 7-10 minutes. With each scan her time is dropping. Although my scan time is still up at about 15 minutes for full upper lower arches and bite, I haven't had nearly as much practice as I should. I am, however, confident that with five to 10 more practice scans, I will easily be at seven minutes or under.

The most amazing part of this journey has in my mind been the patient feedback. As much as us dental nerds oohed and aahed, the patients are blown away. To scan a patient during a consultation appointment and then instantly sit them down and review a 3-dimensional perfect scan of their teeth has a greater "Wow" factor than any other thing we've ever had in our office. To show a patient their malocclusion in 3D, to rotate it and look from every view, is tremendous in getting our message across and even more importantly creates value. It creates value for the work we will be doing. It creates value for our practice. It creates value for us as Doctors, as we are the most cutting edge practice and willing to invest in our future and in making our patients comfortable.

These are exciting times in our field and it's easy to get swept up in the promises of the many new technologies out there. It's important to know that a new device has the backing of a trusted company

and one that is exhaustively testing its accuracy. First and foremost a digital scanner needs to be accurate. Without that, all the bells and whistles are just smoke and mirrors. That's what we have with the 3M True Definition Scanner – we have the most accurate scanner on the market.



Study methodology described in van der Meer WJ, et. al. (2012). Application of Intra-Oral Dental Scanners in the Digital Workflow of Implantology. PLoS ONE 7(8):e43312. doi: 10.1371/journal.pone.0043312. Additional measurements conducted by ACTA (Academic Center for Dentistry Amsterdam); Wicher J. van der Meer, et. Al. (2012). Publication pending.

Then we've got the coolest looking machine and a wand that is significantly smaller than others on the market. In short we have an amazing new device that will change the way we practice. Gone are the days of the kids groaning at the thought of taking a "mold." I had one patient, after she was scanned, tell us, "I wasn't nervous about any part of the process to get braces other than the mold. I'm so happy. You guys are amazing and have this scanner. You guys are the best practice around and I'm so happy we come here."



The best. Amazing.

This is the way we want all of our patients to feel about our practice. This was a patient who hadn't even started treatment yet as this was on the day we scanned her for records. We hadn't even moved a single tooth and yet we are the best and amazing. Yes that is amazing. Thanks to the 3M True Definition Scanner.

Now the only thing left to do is practice, so I can beat Michele.

3M True Definition Scanner

