

In Practice With: Dr. Sergio Rubinstein and Dr. Alan J. Nidetz

In our practice, we strive to provide the best possible restorative and prosthetic dentistry there is. However, the question that often arises is: How many more new gadgets do we need in our office and which ones are really going to improve the quality of our care?

But new technology always raises new questions. The question for all of us is whether we need to change our techniques, our equipment, the materials we learned about in dental school, or even what we learned in a seminar taken a few years ago. We already have ample choices on burs, handpieces, bonding and impression materials, porcelains and cements. Clearly one cannot treat what is not readily visible, and we know digital cameras are a great educational tool that will allow the dentist to visually improve on a diagnosis. But what else is out there?

Take handpieces, for example. The use of an air turbine handpiece has been the norm for treatment in dentistry for several decades with proven results, technically and clinically. However, the introduction of electric handpieces for clinical dentistry has been, in our experience, a quantum leap forward — toward easier, faster and more accurate tooth preparations. With an electric handpiece, we've found that we can drastically improve the degree of accuracy and the level of detail in our preparations.

It is our goal to prepare a tooth with the highest possible definition and accuracy — reproducing it with the impression so that the master abilities of the dental technician recreate the contours, color and translucency that the tooth once had. Any electric handpiece will offer some advantages over the turbine handpiece such as: high torque with ease to cut off old restorations and crowns, and the ability to accurately quantify the torque at which the tooth is being prepared due to a control box so the foot pedal is not fluctuating in power. Most important is the facility to finish the margins at a high definition, leaving a smooth and polished surface. As a result, we produce a restoration that has an excellent fit and hence the best possible tissue response to an artificial material that must be in function in the oral cavity for several years.

However, the NSK™ electric handpiece offers some unique advantages that places it in a class of its own. The company has produced precision-engineered dental handpieces for over 70 years and has a patented Clean Head System featuring a non-drawback mechanism designed to prevent entry of oral fluids and other foreign substances into the turbine head resulting from the pressure change as the turbine stops spinning, thus improving handpiece asepsis. Their Ti-Max electric handpieces are made out of titanium, which makes them remarkably lightweight and yet strong (lighter than stainless steel by 30%). We find that the Ti-Max handpieces are well balanced with a better grip design, and durable with excellent corrosion-resistant properties. NSK's ceramic ball bearings are harder than stainless steel making them lighter with less wear, resulting in longer bearing life. If NSK's features aren't enough to attract you to their handpieces, their reliability and price probably will.

The authors wish to thank Masayuki Hoshi and Toshiyuki Fuyiki for their exceptional ability, dedication and efforts in reproducing natural dentition with their restorations and improving the quality of care we deliver.

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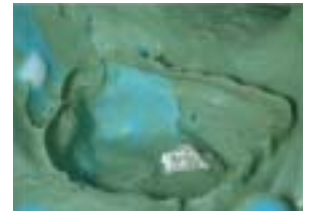
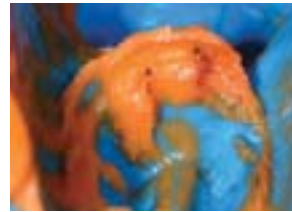


Fig 1, 2, 3, 4: Taken on a Monday morning at a commercial laboratory. These impressions had not been poured up yet. It is clear the impression material did not reproduce the prepared tooth in the mouth due to lack of detail by the dentist with the tooth preparation and impression technique. Should the laboratory technician use the objective or creative side of the brain to read such impressions?



Fig 5. Picture of impressions on teeth prepared with air turbine. Notice the well defined margins and duplication with the impression material (Impregum™ and Permadyne™). Picture taken after pouring it 3 times.

Fig 6. Preoperative picture of premolars with failing amalgams and cusps requiring coverage.



Fig 7. Teeth prepared with NSK™ electric handpiece. Notice the smoothness of the prepared teeth.

Fig 8. Impression of teeth prepared with NSK™ electric handpiece. Notice not only the reproduction of the prepared teeth but also the smoothness of the margins, thus allowing the laboratory technician to create an accurate restoration.



Fig 9. Stone model with accurate reproduction of margins and tooth preparation.

Fig 10. Tescera™ bonded restorations.