Ortho Tribune

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'Rejuventation & Innovation'

Palm Springs will be the site of the 79th annual session of the PCSO from Oct. 22-25. Photo/*www.freeimages.com*

PCSO offers 'Cutting-Edge Orthodontics at a Desert Retreat'

By Sierra Rendon, Managing Editor

The Pacific Coast Society of Orthodontists will host its 79th annual session at the Westin Mission Hills Resort & Spa in Palm Springs, Calif., from Oct. 22-25.

The theme of this year's event is "Rejuvenation & Innovation: Cutting-Edge Orthodontics at a Desert Retreat."

Here's just a sampling of the many speakers and topics on tap for the PCSO:

- "President's Lecture: Orthodontics in an Era of Evidence-Based Clinical Practice," with Dr. Katherine Vig
- "How to Achieve the Strongest Bond to All Enamel and Non-Enamel Surfaces," with Paul Gange
- "Invisalign and Orthognathic Surgery," with Dr. Sam Daher
- "Shortcomings of 2-D Cephalometric Analsis and Quantification of 3-D Images," with Dr. Won Moon

In addition to the educational sessions, which offer more than 20 C.E. credits for clinicians and staff, the PCSO has many activities planned for interaction and camaraderie, such as the PCSO Welcome Party, which will take place at the Palm Springs Air Museum, and the PCSO Kickoff Party in the lobby of the Westin.

If you learn about a product that you can't live without during an educational session, you just might be able to pick it up on site!

Make sure you schedule time to visit the PCSO's exhibit hall, which will feature more than 100 vendors and show-only specials.

For more information on the 79th annual session or on other PCSO activities, visit *www.pcsortho.org*.

FROM THE EDITOR

Historical overview of orthodontic education

From the beginning up through the 21st century: Part II

By Dennis J. Tartakow, DMD, MEd, EdD, PhD, Editor in Chief

Background of orthodontic education in early 1900s

During the 1940s-1950s, dentists seeking to specialize in orthodontics were required to work for several years with an established, board-certified orthodontist as a preceptor (Asbell, 1988; Wahl, 2006). In addition to learning to become clinically proficient, additional science courses were necessary, such as: growth and development, human anatomy, physiology, histology and biomechanics. These courses were taken at an accredited dental school. According to Wahl, all clinical aspects were under close supervision of the orthodontist. The preceptorship program typically lasted for three to four years.

Preceptor programs were used until special graduate departments were established in several of the dental schools (Asbell, 1988; Wahl, 2006). These two types of training methods (preceptorships and dental school graduate courses) continued until the end of the 1950s, when the preceptorship program was becoming obsolete, for it was recognized that not only clinical expertise training was necessary but also the academic or scientific foundation of knowledge and information for orthodontic health care must be provided to the graduate student.

By the early 1960s, preceptorships were totally phased out (Wahl, 2006). The preceptor educational system was replaced with two-year, full-time orthodontic programs in hospitals and universities. They were meticulously examined by the American Dental Association (ADA) to ensure that the educational experience was well above the minimum standards of excellence. The American Dental

▸ See HISTORY, page 2

◂ HISTORY, Page 1

Association (ADA), American Board of Orthodontists (ABO), American Association of Orthodontists (AAO) and the U.S. Department of Education created these standards for all general dental and specialty programs for the protection of the public and the advancement of orthodontic health care for all human beings (American Dental Association, 2008).

To be continued ...

Editor's note: References will be included at the end of the final portion of this series.

Dennis J. Tartakow, DMD, MEd, EdD, PhD, Editor in Chief

'...it was recognized that not only clinical expertise training was necessary but also the academic or scientific foundation of knowledge and information for orthodontic health care must be provided to the graduate student.'

Corrections

Ortho Tribune strives to maintain the utmost accuracy in its news and clinical reports. If you find a factual error or content that requires clarification, please report the details to Managing Editor Sierra Rendon at *s.rendon@dental-tribune .com*.

Tell us what you think!

Do you have general comments or criticism you would like to share? Is there a particular topic you would like to see articles about in Ortho Tribune? Let us know by emailing *feedback@dental-tribune. com*. We look forward to hearing from you! If you would like to make any change to your subscription (name, address or to opt out) please send us an email at *database@dental-tribune.com* and be sure to include which publication you are referring to. Also, please note that subscription changes can take up to six weeks to process.

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Carrière explains facially driven treatment for Class II and Class III

A Q&A with the inventor of the Carrière Self-Ligating Bracket and the Carrière Motion Appliance, including the new Class III appliance

By Ortho Tribune Staff

Dr. Luis Carrière obtained his dental degree from the University of Complutense in Madrid (UCM), in 1991. He then attended the University of Barcelona (UB), where he completed his orthodontic training and received his master of science in orthodontics in 1994. In 2006, he received his doctorate in orthodontics, *cum laude,* from the University of Barcelona.

Carrière is the inventor of the Carriere Self-Ligating Bracket and the Carriere Motion™ Appliance. He is a world-renowned lecturer on these products, in addition to many other topics.

How long has the Motion appliance for Class III malocclusions been on the market?

We just presented the appliance this year at the AAO annual meeting, but the approach is not new; we have been working on it for few years. The Class II appliance was invented for Class II cases. But after giving several courses on Class II, especially in Asia, many doctors were asking about the Class III possibility of using it. So one day we started to try and see if this was a good option, and it's showed amazing results of using the Class II motion appliance in Class III cases.

So we realized, this appliance was really changing the relation in which the mandible interacts with the maxilla, harmonizing soft tissues and balancing the face of the case. We were amazed and totally surprised about the fantastic facial outcomes that we were having only with a minimal approach like this. We decided to create a special design according to the needs of the mandible: the Class III Motion appliance. So the approach is not new. But the appliance by itself, the real strictly Class III appliance, is brand new and officially presented at the 2015 AAO Annual Meeting.

Could you briefly describe the design features of the Motion Class III Appliance? Why does the Class III Motion only have a simple molar bonding pad with this little step in the arm? What is the function of this little step? Why did you give up on the joint design you have with the Class II Motion (rotation of the molar)?

If we take a look at occlusion of the lower arch in relation with the upper, normally there is an inclination of the posterior segments because the buccal side of the lower molars should fit in between the buccal and the lingual pad of the upper ones. This means that if we use the traditional Class II pad ball, its design is too bulky and, many times, it can interfere with the occlusion at the beginning of the bonding. We decided to create a flat surface on the posterior segment in order to avoid the unnecessary collisions on the Class III mandibular positioning of the appliance.

Fig. 1: Carrière Class III Motion Appliance.
Photos/Provided by Dr. Carrière

Fig. 2a: Carrière Class III Motion Appliance with new Pad-Lok Base.

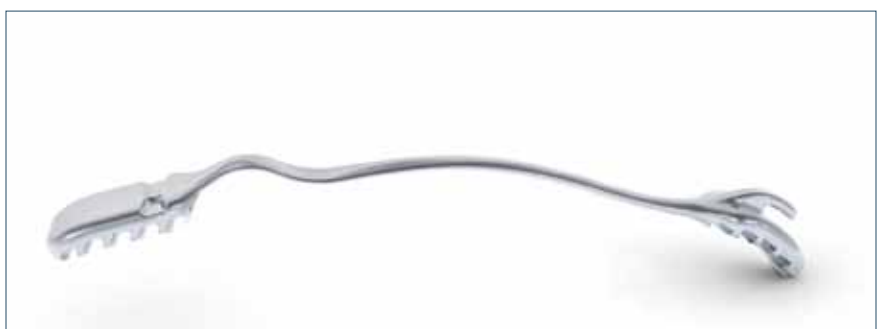

Fig. 2b: Carrière Class III Motion Appliance with new Pad-Lok Base.

Now, what we have created is a design that is very clean and simple but has exactly the same features that we need. But, at the same time, we have adjusted it to the real needs of the Class III malocclusion. So we used Class II Motion appliances at the beginning in Class III patients, but we needed to create something that was really special and was really dedicated to the Class III cases. We did that by flattening the profile, that is now very slim, and it is a very clean appliance, completely dedicated and designed for Class III treatments.

It is very important to understand that the Carriere Motion appliance is the way in which we start 95 percent or more of our fixed cases in our office. This means that Motion is not restricted only to Class II or Class III malocclusions but is also extremely useful for those cases in which we have small crowding, and we need to open limited space in between upper or lower incisors in order to align the upper teeth or the lower anterior teeth without protruding.

At the same time, this accomplishes what we like to call a Super Class I posterior occlusion. So we use the Motion to start the case, simple and minimalistic. I personally feel this is an elegant and efficient approach to the case that diminishes dramatically the period of brackets in mouth for our patients. Shortening the bracket-in-the-mouth stage is a very important factor to most of society today.

Regarding invisible systems such as Invisalign, this approach works amazingly well in simplifying the treatment and dramatically shortening the aligner period. So many complex cases of Class

▸ See CLASS III, page 6

Fig. 3: Designed to be minimally invasive, the Motion Appliance is intended to treat Class III malocclusions without extractions, orthognathic surgery or facemasks.

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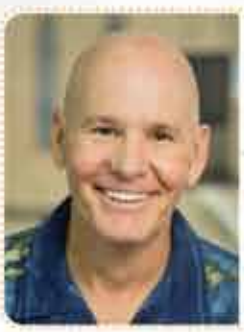

Program Chairman

Dr. David Paquette

An Inside View of Orthodontic Products of The Future

Keynote Speaker

Dr. James McNamara

Evolving Concepts in the Management of Class II and III Problems: Reflections over 40 Years

Featured Speakers

Dr. Sean Carlson

Orthodontics and 3D Technology: What You Need To Know

Dr. Luis Carrière

- Innovations in Self-Ligation Orthodontics: New Products and Enhanced Protocols for Achieving Remarkable Results in Less Time, Every Time
- The Remarkable Benefits of the Carriere® Motion™

Dr. Louis Chmura

Developments in Airway-Friendly Orthodontics™

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◂ CLASS III, Page 4

II or Class III can be easily converted into light Invisalign treatment of less than 14 aligners. This also makes treatments less expensive for the patient and can boost the reputation of the clinicians because they are treating complex cases with simple procedures.

The combined use of Motion with our new Passive self-ligating bracket Carriere SLX and Archwire sequence is really transforming complexity into simplicity while creating a dynamic and efficient scenario in our treatments. We feel satisfied having been able to create the new Carrière SLX. Technically speaking, it has been a challenge. We needed to create a masterpiece of precision, so our engineers did their work, and we achieved the highest level of technical bracket outcomes. It's a real game changer.

How many cases have been treated with the appliance so far?

In our office, right now around 100 cases already have been treated with Class III Motion. It can be astonishing to see the consistency of the extraordinary change to the face of the patient. Changes that you could imagine have been accomplished surgically are not even being treated with a single extraction. I think the reason for this effect is the balanced combination of distalization of the lower posterior segments, change of the posterior occlusal plane and counterclockwise rotation of the mandible, completely changing the relation of the maxilla with the mandible. Distalization in the mandible is extremely fast and efficient, mainly because we have an almost "empty" highway in between the external cortical bone and the internal cortical bone. That is the reason why we need very low force elastics in terms of traction. We only use 6¼ oz., and we normally never use 8 oz. in Class III as we would normally use in our Class II cases.

In relation to the occlusal planes, in Class III we are going to see that we intrude the lower molars with the Motion, and we extrude the canines. This extrusion of canines and intrusion of molars is welcome in Class III and is necessary to change the occlusal plane. We bring the mandible back in a better functional and more esthetic position. The change in between the maxilla and the mandible that happens in our Class II and Class III cases is the main reason why we changed the name of Distalizer to Motion.

So the Carriere Motion appliance will change the relation in between the maxilla and the mandible in some part by changing the posterior occlusal planes, bringing the mandible and the maxilla into a better functional position while balancing the face in our Class II and Class III cases.

In retrognatic Class II patients, we are going to combine upper distalization, controlled upper molar distal rotation and uprighting with mandibular reposition in a better functional relation, giving stability to the case, balancing the position of TMJ anatomical structures and harmonizing the soft-tissue facial esthetics. In Class III patients, we are promoting the posterior mandible reposition, changing the posterior occlusal planes and combining it with distalization of the posterior segments from canine to molars. Many times, this approach will be combined with a certain upper arch development with the Carriere SLX passive system to compensate for the typical premaxillary hypoplasia related to this type of malocclusion. Our main objective is to establish a stable and solid occlusion while balancing the face of the patient.

Figs. 4a, 4b: Patient before (a) and after (b) 14-month treatment.

Figs. 6a, 4b: Patient before (a) and after (b) three month of treatment with Class III Motion appliance.

Were there also cases where the Class III occlusion could not been corrected? Did you notice any TMJ problems during the Class III treatment?

In Class III, we normally find two types of Class III patients: dental and skeletal.

The Motion Class III is an option for both. The skeletal discrepancies have been treated normally with a combination of surgery together with orthodontics. But many patients reject the option of maxillofacial surgery. For many reasons, they reject the treatment, and they stay like they were.

At this point, with this new approach, we can provide another minimally invasive treatment alternative to change that. This is a treatment modality in which we can provide to the patient great facial changes while keeping the facial icon and family traits.

The Motion appliance in Class III is for dental and skeletal Class III cases. It is a plan B for those surgical cases. That is a great plan B that will be keeping the family traits while balancing the structures in a harmonious position on the icon of the face of the patient.

We will not alter completely the structure of the patient's face, but we will balance what features the patient has in a nicer position. And we will realign the patient's features in a more harmonious way, so he can interact with others in his life with more self-confidence, compensated occlusion, facial improvement and spiritual equilibrium.

No TMJ problems have been found at this point. Not a single patient has had any problem or symptomatology of TMJ with this approach. Class III many times has an additional functional shift of the mandible. So while balancing the occlusion, we balance the TMJ anatomical structural and functional relations and give peace to the area.

Are there any studies that show the proportion of the mesialisation effect in the upper jaw and the proportion of the distalisation effect in the lower jaw of the total correction of the Class III?

This is a relatively new approach. We have no studies at this point, but related to the Carriere Class II Motion effect, Professor James McNamara from the University of Michigan and Professor Lorenzo Franchi from the University of Florence are studying our records and measuring them in order to give answers to this. They are tracing our cases to see what is going on, so we will have the results very soon. We can see clinically good and stable occlusion along many years. For example, you could now observe in my lecture several cases that have been out of retention for more than 10 years with a complete stability. But now we need explanations from the experts.

Figs. 5a-5c: Initial intra-oral shot (a), after one month of treatment with Class III Motion appliance, (b) shows the transparent prototype, which is not yet available, and (c) final treatment outcome in 14-month follow-up.

Fig. 7: Initial intra-oral shot.

What forces of elastics do you recommend for children and adults, and what is the recommended wearing time?

Wearing time of elastics normally with the Motion appliance is 24 hours, except for eating, and with fresh elastics after each meal. In Class III in between the external cortical bone and the internal cortical bone in the sagital direction, from mesial to distal, we have a highway. There is no resistance, so we don't need that much force. We only use 6 oz.

In mixed dentition cases, in younger cases, such as a 7-year-old, in which we place a Class III Motion Appliance from the lower first molar to the lower temporary canine, what we are going to do is to slightly minimize the force. So we are going to go for 4 oz., or one quarter of an inch. That will be enough, and we can rise up to 6 oz. if we want, one half of an inch. With this technology, we will see huge changes on the face of the patient, beautiful balance of the face of the patient. This happens in our Class II and Class III patients in mixed dentition. Why? Because we change the the posterior oc-

clusal planes and stimulate the orthopedic effect in a new functional relation. I think this is the keystone.

What degree of a dental Class III can be corrected with the appliance in children?

We can completely change the scenario by controlling the posterior occlusal planes and change the relation between the maxilla and mandible. There are things that we can't change today on our patients: What we can't change is the genetic capacity of the patient to grow, we can't affect at this point genetics, but what we can do is everything on our side to modify the direction of the growth, to modify the position of the structures and to bring structures into another position in order to try to modify the direction of things and to change completely the scenario in a way that we really desire.

What degree of a dental Class III can be corrected with the appliance in adults?

We can completely change full step Class III's in our adult patients. We are treating patients of all ages with this system, teenagers, 30s, 40s 50s and older than 60 years old and seeing improvement in facial and dental repositioning. Skeletal repositioning does not mean skeletal changes, it means a skeletal repositioning of the mandible in relation with the maxilla because the mandible and especially the TMJ is a dynamic anatomical structure. And it is very important that we can balance that and bring this in a better position.

It's amazing the change that we can do in adult cases. It's a great alternative to surgery in adult cases, and it is something that is going to really establish a new scenario for the Class III patients.

You call your new series of lectures 'Facially Driven Treatment For Class II and Class III.' What are your key facts in this matter and why should the factors facial, skeletal and dental not been isolated during the treatment?

Traditionally in orthodontics, we have been focusing a high percentage of our attention on dental interests, looking for good occlusion of the molars, good occlusion of the canines, if there is a midline correction, overbite, overjet and sometimes focusing too much on teeth. The patient is a human being with a face, with a position of bones, with teeth, and everything has to be correctly adjusted and balanced.

So the patient has to have a nice face, a nice facial proportion and relation. We never should forget that behind the face there is a human being who wants to be successful in life, that wants to have natural social relations and wants to have the chance to establish relationships and fall in love.

We as orthodontists are fully responsible for the face of the patient, and this is very important to highlight.

Carrière system is about this and, together with Henry Schein Orthodontics worldwide, we are trying to spread this message. We, the orthodontists, are able to manage the soft tissues of the profile of the patient in a very good way. How we do that? Instead of fulfilling with synthetic material as a cosmetic surgeon does, we use bone and teeth and bring the soft tissues in a better and natural position. We are able to balance the relation between the mandible and the maxilla. We are balancing the face of the patient and behind that we are balancing the life of the patient. We're giving self-confidence and returning happiness to them.

On the opposite, we can totally ruin the life of the patient. How? By extracting teeth that were not necessary to extract.

I am totally convinced that today we cannot look only at orthodontics. No more, never again, can we see it as just a set of teeth.

The patient is a human being with a face, with fears, with dreams, with projects, and we have to honor that.

With the Carrière system, with the Motion appliance, with the Carrière SLX bracket, with the wire sequence, with the respect for the tissues, for the physiology of the orthodontic movement, for the face of the patient, we try to bring benefit to our patients. Many profiles have been affected in the past, so our objective is to create tools to be added to the orthodontic armamentarium that help us in this direction.

To understand you correctly, the orthodontist should put much more emphasize on the patient's facial harmony. Why?

Orthodontics is facial. Orthodontics is face. The orthodontist is responsible for the face of the patient. In my understanding of orthodontics, the orthodontist has to be an expert on repositioning teeth in the correct position, repositioning bones in the correct position and balancing profiles. He is responsible for harmonization of soft tissues and, if necessary, is also an expert who can sculpt the lips with dermal fillers, because nobody understands better than an orthodontist the anatomy and proportionality of a lip. (Orthodontists) should also have expertise on the use of Botox for excessive gingival exposition on patients with gummy smiles.

So we are responsible for the face and not only that. I think we also have to educate people that if they want to have a beautiful face, instead of going to the cosmetic surgeon, they should start by going to an orthodontist.

The orthodontist will be able to give a nice face, a natural and elegant outcome, and if this is not enough change, then as a second option, go to the cosmetic surgeon. But the first choice should be the orthodontist.

If society understands the importance of orthodontics on the face, a big percentage of new patients will fall into orthodontics. We have to start upgrading our speciality. Orthodontics is all about esthetics, art and science.


Fig. 8a


Fig. 8b

Figs. 8a, 8b: Initial profile shot (a) and front shot (b) of patient with mixed dentition.

Fig. 9a


Fig. 9b


Fig. 9c

Figs. 9a-9c: Initial intraoral shot with integrated Class III Motion appliance.


Fig. 10a

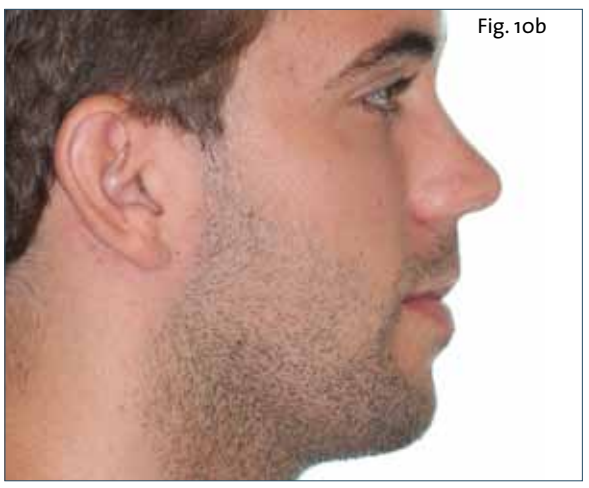


Fig. 10b

Figs. 10a, 10b: Profile shot before (a) and after 10 months of treatment with Class III Motion appliance.


Fig. 11a

Fig. 11b

Figs. 11a, 11b: Profile shot before (a) and after (b) 10 months of treatment with Class III Motion appliance.

Paquette joins Henry Schein Orthodontics

By Henry Schein Orthodontics Staff

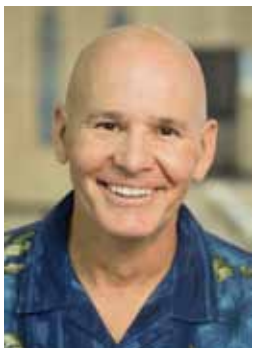
Henry Schein Orthodontics® (HSO) is pleased to announce that Dr. Dave Paquette has joined its company as lead clinical advisor. Paquette will be working with the HSO's research and development teams and leading the HSO clinical advisory boards in evaluating new products and procedures that advance the state of orthodontic treatment.

Paquette said he selected HSO as a working partner because of the high priority it places on clinician's feedback and the organization's long-standing commitment to developing innovative solutions that represent significant breakthroughs in patient care.

"The industry has been in need of more clinical input for some time now, and I couldn't be more pleased to join a forward thinking company like Henry Schein Orthodontics to help chart the future course of our profession," he said.

With a strong lineup of exciting new products in the late stages of development, HSO is thrilled to have Paquette join the organization.

According to Ted Dreifuss, vice president of global sales and marketing: "We are thrilled to have someone of Dave's caliber on the HSO team. He possesses an enormous amount of experience and exceptional clinical skills, as well as vision and passion for the profession that aligns exceptionally well with the vision of Henry Schein Orthodontics."



Dr. Dave Paquette

As a practitioner and teacher for more than 35 years, Paquette brings to HSO a long list of academic and professional qualifications, a keen interest in product innovations and a passion for improving patient care.

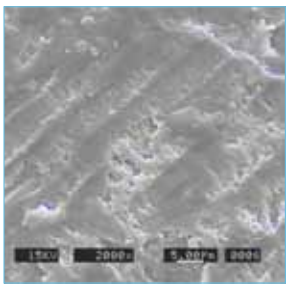


Fig. 1a: Fine diamond roughening.

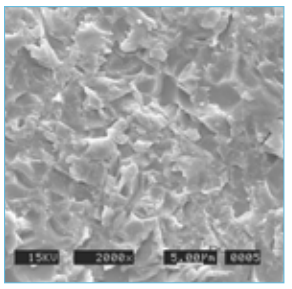


Fig. 1b: Sandblasted (50 micron aluminum oxide).

Photos/Provided by Reliance Orthodontics

Easing chairside stress with Assure Plus

By Reliance Orthodontics Staff

As the demographics of orthodontic patients shift to include an increasingly larger number of adults, artificial substrate preparation becomes a major topic of discussion for clinicians. One of Reliance Orthodontics' flagship products — Assure® — has been the answer for so many difficult bonding situations for the past 15 years, the company asserts.

It is no secret that the foundation of artificial substrate bonding lies in a good mechanical preparation. Traditional methods included using a rotary instrument such as a diamond bur, greenstone or disc to roughen the tooth surface. Although these methods slightly changed the appearance of such non-enamel surfaces, the resulting mechanical retention was very poor. The SEM pictures (Figs. 1a, 1b) clearly illustrate the stark differences between utilizing a rotary instrument and an intraoral microetcher.

Reliance now offers a kit that will produce sufficient strength for chairside bonding, regardless of the substrate involved. The ASK™ (All Surface Kit) only includes three components: Assure Plus, Porcelain Conditioner and an Etchmaster® microetcher.

The Etchmaster is a small sleek design that allows easy access to the posterior and very little cleanup when used with a high-speed evacuation, according to Reliance. Simply unscrew your handpiece from a high- or low-speed air line, attach the Etchmaster sandblaster, insert the preloaded tips (filled with 50 microns) and begin sandblasting. Clinicians now can eliminate all other artificial surface primers as well as numerous different protocols. With the All Surface Kit, all non-enamel substrates are handled with only two protocols:

1) Porcelain — Sandblast, rinse and dry. Apply one coat of porcelain conditioner. Wait one minute. Apply Assure Plus, dry and light cure.

2) Composite, zirconia, gold, amalgam, stainless steel, acrylic temporary pontic teeth — Sandblast, rinse and dry. Apply Assure Plus, dry and light cure.

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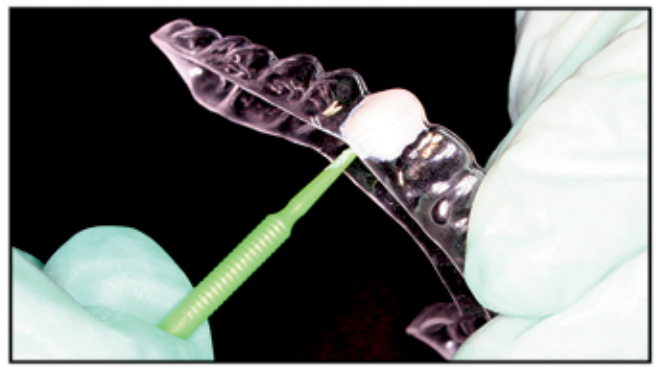

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- Perfect A Smile® flexes with the plastic and will not fail due to stress or flex.
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