

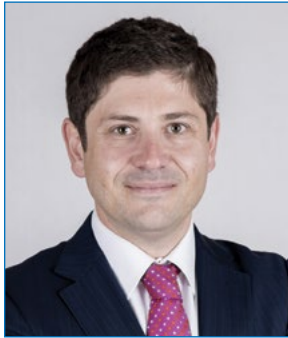


**3M** Science.  
Applied to Life.™

# Innova

*Orthodontic science and  
practice excellence*

Originally *Orthodontic Perspectives Innova*  
Vol. XXV, No. 1, Global Edition, May 2018



**Sebastian Arana**  
President and General  
Manager, 3M Oral Care

## Hey! What's New?

What's new? It's a question we're all very familiar with. Sometimes we do the asking and sometimes we're on the receiving end. In reference to this year's AAO meeting, the answer is "a lot"! Let me explain.

Clear aligners have made huge advancements, and their use is growing quickly in the U.S. and around the world. At the convention, 3M will be previewing our 3M™ Clarity™ Aligners. We're excited to participate in this area. The end-to-end digital workflow and exceptional support will offer clinicians control, flexibility and choice.

As always, 3M will continue to support the orthodontic community with a doctor-centered approach. We believe the orthodontist is the true critical factor in a successful case. The introduction of this new appliance will ramp up later this year. We expect you will welcome this new option from a company with a long history of world-class orthodontic products and a proven track record of supporting the orthodontic specialty.

As part of this expansion, 3M has announced a series of partnerships with 3Shape. We think providing open access and choice to the orthodontic community is the right way to go. 3M and 3Shape are two different companies with the common goal of providing excellence and choice.

While aligners and digital workflows are all the buzz, let's not forget about new innovations in the conventional orthodontic area. 3M's Clarity™ ADVANCED Brackets combined with the APC™ Flash-Free Adhesive system provides the very best of esthetics and performance. Stop by the 3M exhibit area at AAO to learn more about why this might be exactly what you need to impress your patients and help build your practice.

Oh! And there is one more thing that's new. Yours truly. Earlier this year, I had the great privilege to take over leadership of the incredible 3M Oral Care business. I look forward to continuing to drive the technical leadership and innovation that defines our business. Please stop by to say "hello". I can't wait to tell you what's new.

**3M** Science.  
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*Innova* (originally *Orthodontic Perspectives Innova*) is published periodically by 3M to provide information to orthodontic practitioners about 3M orthodontic products and services. 3M welcomes article submissions or article ideas.

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# We ♥ orthodontists.

You change patients' lives every day. We want to support you with efficient and esthetic choices that deliver control and flexibility for the best patient outcomes.

**Contact your 3M Oral Care representative  
to find out what's next.**



# 3M in the News



## 3M wins prestigious ethics award

3M has been named one of the “World’s Most Ethical Companies®” by the Ethisphere® Institute, marking the 5th year in a row 3M has been accorded this designation. 3M was one of 135 companies from 23 countries and 57 industries around the world that were selected for the 2018 honor.

“Since 2007, Ethisphere has honored those companies who recognize their critical role to influence and drive positive change in the business community and societies around the world and maximize their impact wherever possible.”

## 3M named to *Fortune*’s World’s Most Admired Companies list

3M has been named to *Fortune* magazine’s World’s Most Admired Companies list, as announced in the January 2018 print edition of the publication. 3M placed #21 on the list, based on a survey of almost 4,000 directors, executives and security analysts about companies they admire most. The ranking is up two spots from last year.

## 3M and 3Shape Partner to Advance Digital Workflows for Orthodontics

*We are pleased to share with our Orthodontic community the partnership between 3M and 3Shape—announced in January, 2018.*

3M and 3Shape announced their intention to work together to advance the field of orthodontics through digital workflows supporting indirect bonding, clear aligners and other emerging digital orthodontic workflows.

“Our partnership with 3Shape puts our customers first and is designed with practitioners, their patients, and their businesses in mind. Our goal is to make it easier for Orthodontists to engage patients, provide effective treatments and run a profitable practice. The workflow will include our indirect bonding solutions, our customized lingual offering, and future new offerings in the digital orthodontic space,” said Jim Ingebrand, President and General Manager, 3M Oral Care Division.

For 3M’s and 3Shape’s joint customers, the cooperation will enable use of the 3Shape TRIOS scanner and 3Shape indirect bonding software with 3M’s Incognito™ lingual appliance system, Clarity™ ADVANCED Brackets with APC™ Flash-Free Adhesive technology for indirect bonding procedures, as well as future orthodontic product offerings. These combined solutions will enable better outcome while improving productivity of the practice.

“3Shape believes that an open market with freedom of choice is in the best interest of doctors and patients. Partnering with 3M will help orthodontists provide better treatment for their patients using 3Shape’s award winning TRIOS scanner and digital workflow software with 3M’s treatment solutions in integrated workflows,” said Allan Hyldal, 3Shape Vice President, Orthodontics & Implantology.

Emerging technology is enabling new efficiencies and greater predictability in the practice of orthodontics. While technology is changing how orthodontics is practiced, the end goal remains the same—a beautiful smile and healthy teeth that will last a lifetime.

No two smiles are alike. To develop customized treatment plans for each patient’s unique clinical diagnosis, orthodontists need flexible, choice-based solutions that deliver the best outcomes for their patients.

# Choice, Flexibility and Control

## *New Aligners Highlight A New Approach in Orthodontics*



**Tom Worm, 3M Oral Care**

Tom Worm is the Global Business Leader for 3M Oral Care Solutions Division in the area of Custom Orthodontics. For 25 years he has focused on developing innovative new business, product and technology platforms that deliver real value to the customer.

2018 is a milestone year for 3M, and we have been working hard to bring solutions to market that help you reach your practice goals. As our new Vice President and General Manager, Sebastian Arana, mentioned in his *Welcome Letter*, 3M is introducing 3M™ Clarity™ Aligners at the 2018 AAO Annual meeting – expanding our esthetic portfolio into one of the most comprehensive in the industry! Additionally, it advances 3M's vision of what it is to be a partner with Orthodontists – offering choices and flexibility, we're here with high quality products and exceptional service to support the practice when and how you decide.

To further support your treatment planning and case submission for our new aligner system we have developed a web-based interface, the 3M Oral Care Portal. In collaboration with orthodontists, we've made it

intuitive and easy to use, with a robust feature set that enables you to design the patient's Clarity Aligner treatment plan. We are excited about the positive feedback and excitement from Orthodontists, staff and their patients who have had an early chance to use our new platform!

3M is further investing in Orthodontists and the future of orthodontics as a specialty. This commitment, combined with our long history, our passion for innovation, and our ability to deliver choices in treatment options will provide professionals and patients an important new approach in esthetic orthodontics.

We are excited about the future and look forward to working with you to advance the orthodontic industry!

For more information about 3M™ Clarity™ Aligners:

►► [3M.com/ClarityAligners](https://3M.com/ClarityAligners)

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# A New Approach to Aligner Orthodontic Treatment



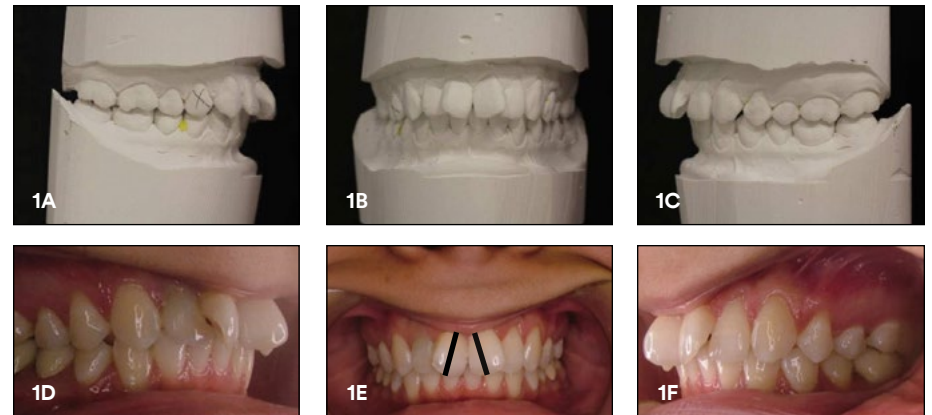
**Dr. Neil Warshawsky, DDS, MS**

Dr. Warshawsky is the founder and owner of Get It Straight Orthodontics, a leading-edge orthodontic practice in the Chicago area. A board certified orthodontic specialist since 1992, he has over 25 years of experience with cleft palate and craniofacial cases, and lends his support to all of the craniofacial teams in and around the greater Chicago area. His practice uses state-of-the-art orthodontic treatments to deliver healthy, esthetic results.

Dr. Warshawsky was one of the first orthodontists outside of Europe to begin using the 3M™ Incognito™ Appliance System in 2003. Since then his practice has become one of largest volume users of Incognito Appliances in North and South America. Dr. Warshawsky received his DDS, MS and Certificate of Orthodontics from the University of Illinois at Chicago, and is a member of the World Federation of Orthodontics.

Nearly two decades ago, the addition of clear aligners as a mode of orthodontic treatment invited new thinking in resolving malocclusions. While it was novel at the time, the overall process of treating with aligners has changed little over this period, due in part, to the fact that there was one primary source for aligners that defined the process, capability and limitations of aligners. As a result, there is a tendency to assume that there is no room for new thinking in the area of clear aligners.

Enter 3M™ Clarity™ Aligners. Clarity Aligners represent a digital disruption for the removable orthodontic market. This new approach for therapy is defined by its control and flexibility. The system includes elements that make it able to take on limited versus comprehensive issues, the ability to load a scan into the web-based portal to see your progress, digital retainers available for all cases, and most importantly an open platform where files from any approved scanner are accepted. This new tool, if you will, puts the control back in the doctor's hands for ordering and designing custom orthodontic appliances, data storage, and immediate progress checking, to name a few advantages.



**Figure 1A-F**

Once again, there is the opportunity for new thinking in regards to treating with aligners. To illustrate this, the following case documents some of the strengths of the system. Case 123 is mild relapse of the anterior teeth. The images in Figure 1 show the original malocclusion that was typified by a 50% overbite and significant rotation of the anterior teeth.

When the original malocclusion presented, it was a Class II Div I Sub right malocclusion. The central incisors were significantly rotated in to the mesial with axial inclination of the central incisors being severely affected. A decision was made to remove the upper right first premolar and set the molar Class II. The case finished over six years ago.

The patient lost touch with the practice but returned almost six years later. She had stopped wearing her retention almost four years previous to that on the upper teeth. Having her original records, it is clear that the teeth have retained somewhat of a memory of their initial position as they are relapsing back to their original position (Figure 2A-B).

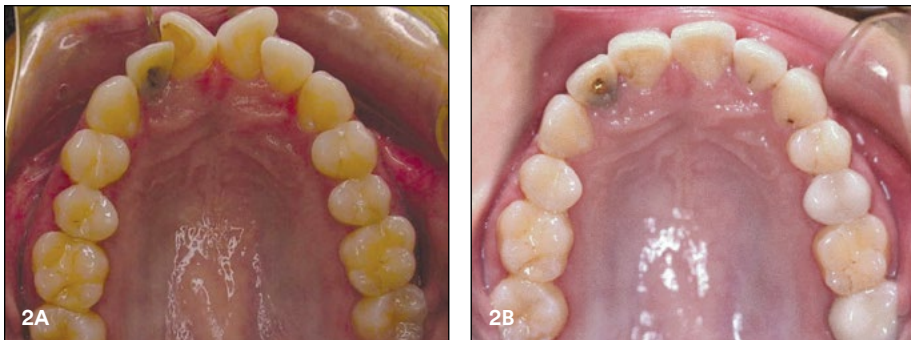


Figure 2A-B

Her concern was she did not want to let it get worse, but she also did not want to go back into braces. A decision was made to treat her with the Clarity Aligner system. Although the case was not exceptionally hard, it demonstrated a very strong point about the digital workflow and the artificial intelligence powering the Clarity Aligner system. Aligners in general fit worst on the first day. As a result, it is not abnormal to see that there is a small amount of “lag” when treating a case. The result in this case illuminates the new thinking the system provides in terms of how aligners in different stages can achieve the desired result.

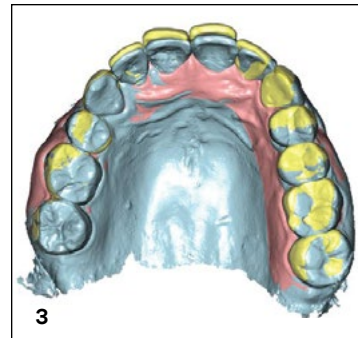
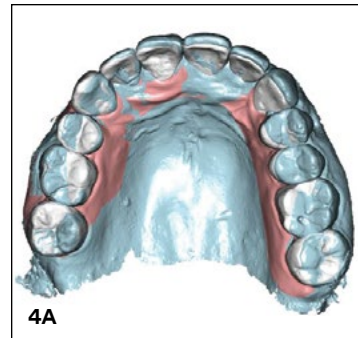


Figure 3

The yellow in Figure 3 represents the original malocclusion and the beginning of the treatment with Clarity Aligners. The blue is the actual scan of the teeth at stage 14. An overlay of the two scans superimposed on the posterior teeth shows the movement achieved.

The images in Figure 4A-B overlay the blue scan at stage 14 to actual predicted position, which is white. The images are close, but not identical. That is to be expected given the lag of the aligners movement.

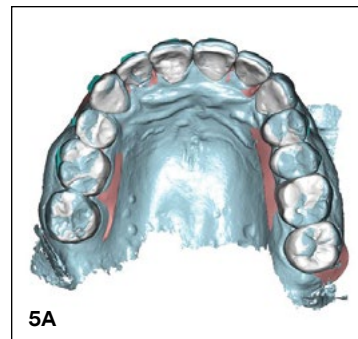


4A



4B

Figure 4A-B



5A



5B

Figure 5A-B



The new thinking that came as a part of this treatment occurred at the end of the case. As part of the treatment plan we delivered a 3M Retainer, part of the Clarity Aligner system, to the patient.

Twelve days after the retainer was delivered, we scanned the patient to see what the teeth looked like (Figure 5A-B).

All three teeth on the patient's left are close, but not fully seated, due to the concept of Aligner Lag. (In Figure 5A-B, they are blue on the anterior view, indicating that they are too far forward compared to the white setup). A second scan was done 26 days after the delivery of the retainer and upon evaluating the position of the teeth it was concluded that the teeth completed their movement as the software predicted (Figure 6A).

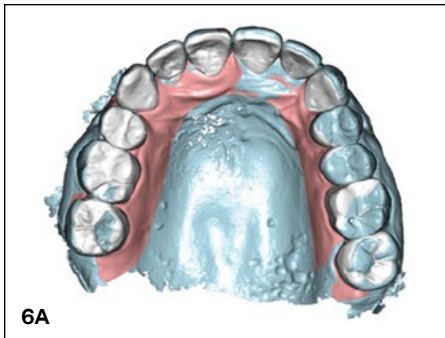


Figure 6A-B

Figure 6A shows the close alignment between the blue scan image and the white setup image after 26 days of retainer wear. A fixed retainer was placed behind the upper teeth (Figure 6B) and the patient is instructed for bedtime that she should utilize her removable retainer for long-term care.

Of interest to note is the fact that you can order as many or as few retainers as you want at any point in treatment. In this case we will scan the final fixed retainer and request our nighttime retention to be based on the scan. I recommend replacing the aligner annually, to maintain what we corrected.

The options within the system allowed for the solutions needed in this result. Designed from the ground up, the Clarity Aligner system provides a new approach to comprehensive custom orthodontic therapy. Designed to work in conjunction with a dental professional, this is a state-of-the-art solution to put choice, flexibility, and control back in the doctor's hands.

*Case photos provided by Dr. Neil Warshawsky.*

For more information about 3M™ Clarity™ Aligners:

▶▶ [3M.com/ClarityAligners](https://www.3M.com/ClarityAligners)

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## Q & A with... *Dr. Herbert Hughes*



**Herbert Hughes, DDS**

Dr. Herbert Hughes is a third generation dentist specializing in orthodontics. For the past 30 years he has been in private practice in Alexandria, Va. Dr. Hughes attended VCU School of Dentistry and graduated from Boston University specializing in orthodontics. He is currently the president of the Northern Virginia Orthodontic Study Club (NVOC) and is the president-elect of the Virginia Association of Orthodontics (VAO).

Ignorance can be a powerful driving force. Especially when it's the ignorance of your potential patient base and it's threatening your very profession. Dr. Herbert Hughes has spent the last 32 years in orthodontics learning more and more about his patients, including what they do and do not know about the orthodontic specialty – and what he's learned in recent years has been somewhat alarming.

Adult patients, specifically, don't always seek the advice of an orthodontist about what could be done for their smile. With so much direct to consumer advertising, they may assume a DIY company promising amazing results for anyone by using clear aligners sent through the mail will produce the smile they want, in the timeline they need, with little to no long-term oral health issues, for example.

This new way of reaching consumers with smile treatment options available is causing some orthodontists to re-think their practice model, especially when considering adult patients. Recently, we sat down with Dr. Hughes to talk about the changing needs of the orthodontic patient, his views on esthetic trends, and how his own practice is evolving to meet the needs of his community.

**Q: Dr. Hughes, you recently expanded your practice to include what you now call the Adult Smile Center. What led you to make this decision?**

A: We noticed that many of our parents were accompanying their children to their orthodontic appointments with either braces or aligners and they weren't being treated by us! Their comments were "I thought you only treated children" or "I thought you only did braces." We knew that in order to be a player in today's competitive market we needed to not only educate our potential patients, but also offer them an experience that is memorable and sharable. This is the reason why we created the Adult Smile Center, a relaxing spa-like environment where adults are treated like adults. We have a completely separate reception room with gourmet beverages and soft background music along with aromatic scents. We have two large semi-private treatment bays which allow for patient comfort as well as room to relax.

**Q: What philosophies guide your approach to working with today's esthetic-minded orthodontic patient?**

A: I have several core orthodontic beliefs. First, become a great orthodontic problem solver. Don't sell the tools that you use, sell the problems you solve; however, use the best tools to treat your problems. Second, implement evidence-based orthodontics. This has been ingrained in me since my residency at Boston University. Third, deliver excellent results in the least amount of time and at the right time. Lastly, if you don't give patients what they want they will never be truly happy.

The challenge is to give them what they want and need. As a seasoned orthodontist, it only takes a quick look at a patient's records to determine what they need, but in order to understand what they want you have to ask probing questions and then actively listen to their responses. I recently had a 50-year-old female who shared with me that she didn't need a Hollywood smile, she wanted

a Facebook Smile! What she was telling me was that she wasn't demanding perfection, however, she wanted a smile that she could proudly display with her friends and family.

Today's adult patients want short-term treatment with esthetic options. So that's what we offer them. The patients want clear options while the orthodontists want the best clear appliances to deliver superior results in a timely manner, so we use 3M™ Clarity™ ADVANCED Ceramic Brackets and 3M™ Clarity™ Aligners to accomplish both.

**Q: DIY companies are aggressively marketing their clear aligners directly to the consumers claiming significantly less treatment times, drastically reduced costs, and even no need for office visits! Is this a viable treatment option and how is it affecting your practice?**

A: As a member of the AAO Council on Communications, I can assure our fellow orthodontists that the AAO is aggressively educating the general public on the differences between an orthodontic specialist and a general dentist or DIY company. The good news is that this situation has allowed us to have a conversation with potential patients on the importance of seeking treatment with an AAO orthodontist. It is the orthodontic specialist's education, skills and experiences that allow them to offer customized treatment plans and deliver excellent results. At the end of the day, patients want their orthodontic problems solved and don't really care as much about what tools are used as long as it gets the job done. Another philosophy that I have, as I mentioned earlier, is to not sell the tools that you use, sell the problems that you solve; however, use the best tools to solve your problems. This is the reason why I like so many of 3M's orthodontic products. I believe they have the best tools to solve my orthodontic problems.

I'm not as concerned about DIY companies taking a big bite out of my practice as I am about protecting the public from potentially harmful treatments. The majority of DIY orthodontic patients are millennials who have embraced technology. Understanding this, the COC has partnered with BuzzFeed to produce a YouTube video called "Leave it to the professionals." It is humorous but gets our point across effectively.

**Q: You mentioned offering clear choices to your patients. How do you determine which clear option is the best one to solve their problem?**

A: Great question! An orthodontic specialist has the knowledge and experience to understand the complexities of tooth movements and as a result, can recommend the best appliances for their patients. Rotated teeth are corrected more effectively with fixed appliances (brackets) while anterior open bites magically close with the use of removable clear aligners to intrude the posterior teeth. Sometimes, I have found it best to use a combination of Clarity ADVANCED Ceramic Brackets followed by Clarity Aligners. I love the flash-free feature on the Clarity ADVANCED brackets but more importantly, the ease of removing the brackets on the patient's de-bond date is a game changer!

**Q: So, what's new and exciting in orthodontics?**

A: For more than a decade there has only been one clear aligner game in town. That is, until now! It is refreshing to know that we now have choices. 3M is introducing a clear aligner under its Clarity brand. I've been privileged to be a part of the first-time users and I'm really enthusiastic about the results that I'm seeing in my patients so far. The aligners look and feel as good as anything I've seen, and my staff loves their attachment template much better than what they're used to using.

Best of all, getting another option from a trusted company in orthodontics is something orthodontists have been wanting for quite some time. I want to partner with a company that has a full range of superior products and services to support me so that I can deliver excellent results to my patients in the shortest amount of time. I'm confident that Clarity Aligners will be a force to be reckoned with.

**Q: What book is on your nightstand?**

A: Donald Miller's *Building a StoryBrand*. Game changer on how we market and build our brand. Take home message is that you are not the hero in your patient's story. The patient is the hero and your role is to be a guide to help your patient achieve what they want to achieve. This book is a must read!

For more information about 3M™ Clarity™ Aligners:

▶▶ [3M.com/ClarityAligners](https://3M.com/ClarityAligners)

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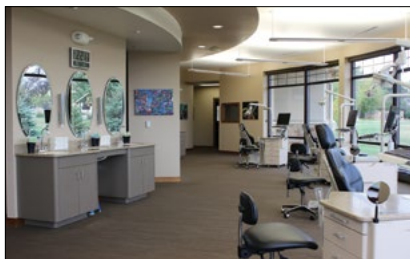
# My experience with 3M™ APC™ Adhesive



**Kirk R. Davies, DDS, MS**

daviesortho.com  
Waukesha, Wis.  
October 2017

I have been using the **3M™ APC™ Adhesive Coated Appliance System** for about 15 years. The advantages to me range from a **more organized** way to inventory and prepare brackets prior to placement, to **ease for the chairside assistant** passing brackets to me with a completely consistent amount of adhesive on the back of the bracket. The labeling of the bracket package makes it very difficult to have the wrong bracket handed to me. **Parents appreciate the single-use packaged brackets** from an infection control standpoint. The APC system has allowed my office to save time setting up before the appointment as well as shorter doctor time necessary for bracket placement. With fewer steps necessary in the bonding process, **there are fewer steps that can lead to bond failure**. Any extra bond failure creates an expensive, time consuming, and negative patient experience.



Over the past year and a half, I have been using **3M™ APC™ Flash-Free Adhesive**. It offers all the benefits of previous APC Adhesive systems, with the added benefit of **no flash clean-up**. Placing an APC Flash-Free Adhesive coated bracket is similar to a traditional bracket placement, but there is no flash to clean up. In our practice, what no flash means to the doctor is **about five minutes of time savings during a full bonding**. That isn't just any five minutes – cleaning up the flash around a bracket is the least favorite and least productive part of the appointment.

Cleaning up the flash is the exhausting part of the placement. It uses your fine motor skills, constant concentration, and a visual focus. Using extra effort cleaning up the flash wears you down, makes you more tired, and increases stress. There is also a constant worry about accidentally bumping a bracket out of position. APC Flash-Free Adhesive reduced that stress for me. It gave me a busy summer without burnout.

APC Flash-Free Adhesive answers the question,

*“If I could improve one thing about the bonding procedure to make life easier, what would it be?”*

**APC™ Flash-Free**  
Adhesive Coated Appliance System





# 3M<sup>SM</sup> Health Care Academy

## Upcoming Educational Opportunities



### 3M<sup>TM</sup> Incognito<sup>TM</sup> Appliance System Certification Courses

<p><b>Sydney, Australia</b> <b>April 13, 2018</b></p> <p><b>Speaker</b> Dr. Steve Stramotas</p> <p><b>Language</b> English</p> <p><b>Contact</b> <a href="mailto:engage.3m.com/IncognitoAU2018">engage.3m.com/IncognitoAU2018</a></p>	<p><b>Osaka, Japan</b> <b>April 18-19, 2018</b></p> <p><b>Speakers</b> Dr. Shoji Sugiyama Dr. Keizo Hirose</p> <p><b>Language</b> Japanese</p> <p><b>Contact</b> Masaya Kawate +81-3-6409-5511 <a href="mailto:mkawate@mmm.com">mkawate@mmm.com</a></p>	<p><b>Tokyo, Japan</b> <b>May 30-31, 2018</b></p> <p><b>Speakers</b> Dr. Shoji Sugiyama Dr. Keizo Hirose</p> <p><b>Language</b> Japanese</p> <p><b>Contact</b> Masaya Kawate +81-3-6409-5511 <a href="mailto:mkawate@mmm.com">mkawate@mmm.com</a></p>	<p><b>Seoul, Korea</b> <b>June 2-3, 2018</b></p> <p><b>Speakers</b> Prof. Young-Guk Park Dr. Jae-Sik Hur</p> <p><b>Language</b> Korean</p> <p><b>Contact</b> Hyemin Park +82-2-3771-4927 <a href="mailto:hpark14@mmm.com">hpark14@mmm.com</a></p>	<p><b>Tokyo, Japan</b> <b>November 14-15, 2018</b></p> <p><b>Speakers</b> Dr. Shoji Sugiyama Dr. Keizo Hirose</p> <p><b>Language</b> Japanese</p> <p><b>Contact</b> Masaya Kawate +81-3-6409-5511 <a href="mailto:mkawate@mmm.com">mkawate@mmm.com</a></p>
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### Incognito System Advanced Courses

<p><b>Neuss, Germany</b> <b>April 13, 2018</b></p> <p><b>Speaker</b> Dr. Esfandiar Modjahedpour</p> <p><b>Language</b> German</p> <p><b>Contact</b> Daniela Fellner +49 8191-9474-5043 <a href="mailto:3MUnitek.Kurse@mmm.com">3MUnitek.Kurse@mmm.com</a></p>	<p><b>Tokyo, Japan</b> <b>September 6, 2018</b></p> <p><b>Speakers</b> Dr. Shoji Sugiyama Dr. Keizo Hirose</p> <p><b>Language</b> Japanese</p> <p><b>Contact</b> Masaya Kawate +81-3-6409-5511 <a href="mailto:mkawate@mmm.com">mkawate@mmm.com</a></p>	<p><b>Frankfurt, Germany</b> <b>September 28, 2018</b></p> <p><b>Speaker</b> Dr. Esfandiar Modjahedpour</p> <p><b>Language</b> German</p> <p><b>Contact</b> Daniela Fellner +49 8191-9474-5043 <a href="mailto:3MUnitek.Kurse@mmm.com">3MUnitek.Kurse@mmm.com</a></p>
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## NEW! 3M Excellere Meetings

Save the dates!

- 1** San Diego, California  
**September 15-16, 2018**  
<https://3MOralCare.cvent.com/EXCELLERE2018>
- 2** Madrid, Spain  
**September 21-22, 2018**  
To register, contact [secretary@terra-consultoria.com](mailto:secretary@terra-consultoria.com)



## 3M<sup>SM</sup> Health Care Academy

# Excellere

*Latin inf. /ek'sel.ler/:*  
to elevate, to rise up, to surpass



### Two Event Locations!

**1** San Diego, CA  
September 15-16, 2018

*The San Diego education program will focus on:*



Implementing  
a truly digital  
workflow.



Advancements  
in esthetic  
treatment.



Techniques to  
achieve facial  
esthetics and  
healthy occlusion.



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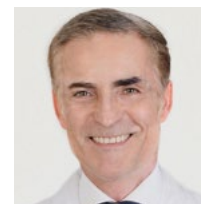
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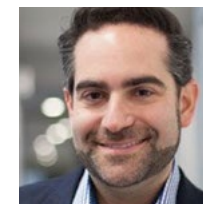
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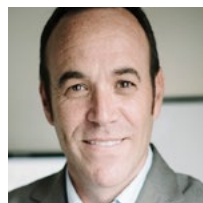
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# Clinical Cases





## 3M<sup>SM</sup> Health Care Academy

# Digital Smile Design and 3M<sup>TM</sup> Clarity<sup>TM</sup> ADVANCED Ceramic Brackets: the perfect synergy



**Riccardo Riatti, DDS, MS, Specialist in Orthodontics**

Dr. Riatti received his Dental Degree from the University of Parma and his Orthodontic Degree from the University of Cagliari. Since 2008, he has been Visiting Professor at the School of Specialization in Orthodontics at the University of Trieste. He is a diplomate of the Italian Board of Orthodontics

(IBO) and a diplomate of the European Board of Orthodontists (EBO). His teaching topics are esthetics, digital technologies and compliance-free treatment. Dr. Riatti maintain a private practice in Reggio Emilia, Italy.

### Introduction

Nowadays esthetics is becoming more and more important. Our patients ask for beautiful smiles and esthetic appliances.

In recent years, DSD (Digital Smile Design) has been used widely by prosthodontists<sup>1</sup> and it can also be a useful tool for orthodontists. This article describes a case in which DSD has been integrated into the diagnosis process in order to obtain a better orthodontic treatment plan.

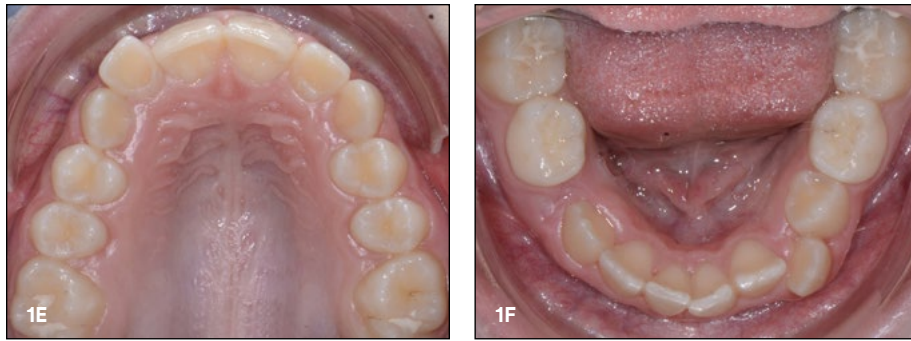
Use of 3M<sup>TM</sup> Clarity<sup>TM</sup> Ceramic Brackets with hi-tech 3M<sup>TM</sup> Unitek<sup>TM</sup> Lateral Development Archwires and overlay intrusion arch permitted perfect control of tooth movement. It was possible to expand arches in a controlled manner, reducing negative buccal corridors and to open the bite without mandibular posterior rotation (important for sagittal chin projection).

### Diagnostic description of the case

A female patient, aged 10.6 years at start of treatment, with Class II skeletal bases (ANB 5°) on an average angle pattern (SN-mandibular plane angle 34°) and with Class II molar and canine relationship.

Moderate crowding was present in the lower arch and mild crowding was present in the upper arch.

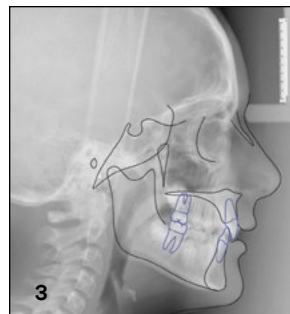
The patient was in late mixed dentition, lower second deciduous molars were still present but about to be shed. There was a lower midline shift of 2 mm to the right, a deep overbite with lower incisors at -4 mm to the APog line and upper incisors at 95° to the palatal plane.



**Figure 1A-I:** Initial photos.



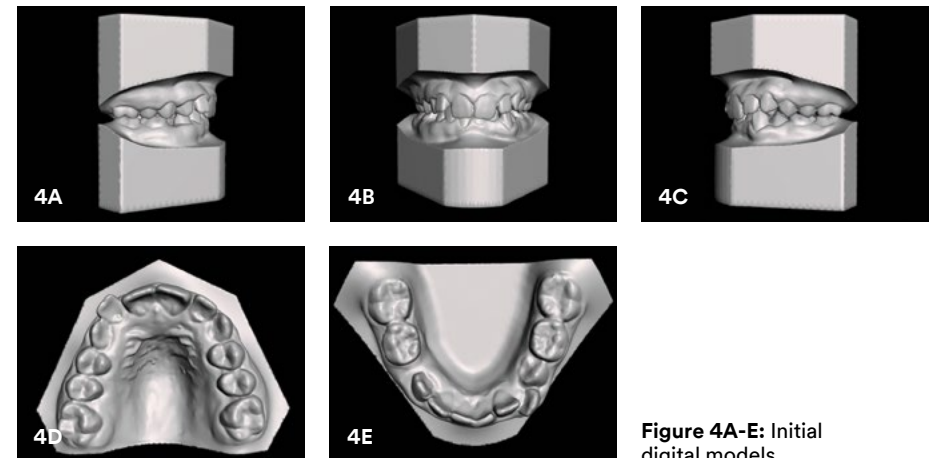
**Figure 2:** Initial X-ray.



**Figure 3:** Initial cephalometric analysis and tracing.

Cephalometric Analysis		
	Norm	Pre-Treatment
SNA	82°	79°
SNB	80°	74°
ANB	2°	5°
SN-GoGn	32°	34°
Palatal-Mandibular °	28°	24°
U1 - APog	5 mm	1 mm
L1 - APog	2 mm	-4 mm
U1 - Palatal	110°	95°
L1 - Mandibular	95°	80°
U1 - L1	127°	161°

**Table 1:**  
Initial cephalometric analysis.



**Figure 4A-E:** Initial digital models.

## Treatment plan

The chief concern of the patient was the gummy smile and the alignment of the anterior frontal teeth. Digital Smile Design orthodontic planning was adopted in order to plan how to improve smile esthetics. With this important tool it became evident that the upper central incisors had to be intruded 2 mm to reduce the gummy smile and that canine-premolar torque was too negative (Figure 5A-D). It was possible to plan the movement of every single tooth with high precision.

3M™ Clarity™ ADVANCED Ceramic Brackets were used in both arches to satisfy the patient's esthetic request while maintaining the high torque control characteristic of a pre-adjusted edge-wise fixed appliance system. A High Torque Prescription was chosen for the upper central incisors (+22°) and for the upper cuspids (+7°). A Roth Prescription (+8°) was chosen for the upper lateral incisors. In the lower arch the MBT prescription was used. The possibility to choose different torque values for every single tooth permitted a simplification of the finishing process by reducing the need for bends on the wire. The bite was opened principally through lower incisor absolute intrusion, avoiding premolar and molar extrusion, in order not to open the SN-mandibular angle. For this reason, use of intrusive mechanics was planned. Reducing profile convexity and increasing chin projection were both key points for the facial appearance of this patient.

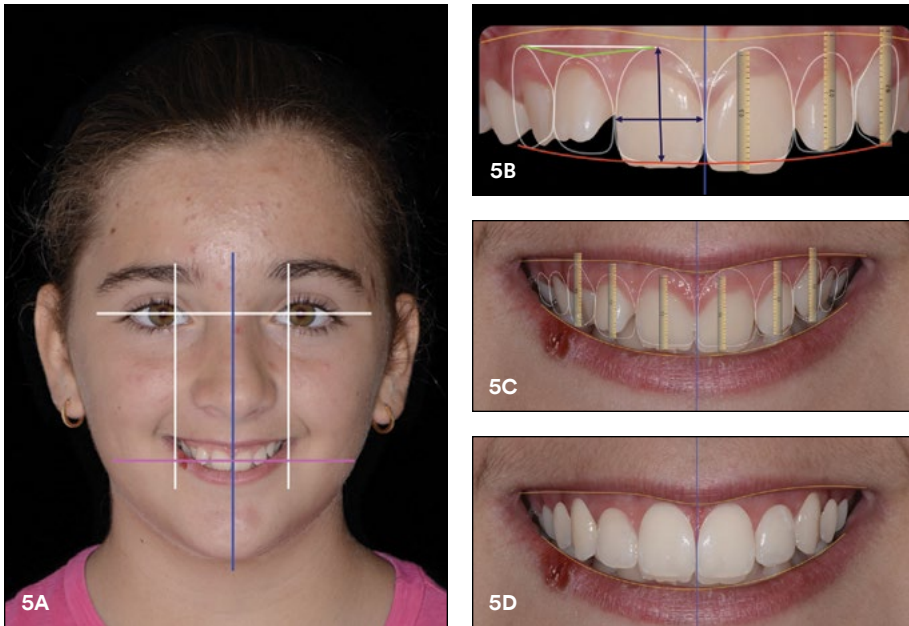


Figure 5A-D: DSD Digital Smile Design planning.

## Treatment progress

- Archwire progression in the upper arch:
  - .014 Nitinol Lateral Development – Arch Form Size R28 (1.5 months)
  - .018 Nitinol Lateral Development – Arch Form Size R28 (1.5 months)
  - .016 x .022 Nitinol Lateral Development – Arch Form Size R28 (6 months)
  - .019 x .025 Nitinol Lateral Development – Arch Form Size R26 (3 months)
  - .019 x .025 Stainless Steel Posted – Individualized Arch Form (7 months)
- Archwire progression in the lower arch:
  - .014 Nitinol Lateral Development – Arch Form Size R28 (3 months)
  - .018 Nitinol Lateral Development – Arch Form Size R28 (1.5 months)
  - .016 x .022 Nitinol Lateral Development – Arch Form Size R28 (3 months)



Figure 6A-C: Treatment progress photos: upper arch bonding.

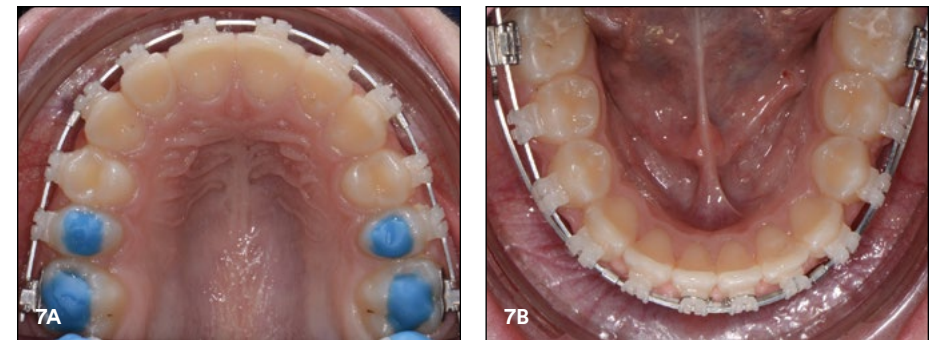


Figure 7A-E: Treatment progress photos: absolute intrusion of lower incisors.



With these archwires, an overlay intrusion arch (.019 x .025 Beta III Titanium) was used to obtain an absolute intrusion of the lower incisors (7.5 months).

.019 x .025 Nitinol Lateral Development – Arch Form Size R26 (3 months)

.019 x .025 Stainless Steel Posted – Individualized Arch Form (5 months)

- Upper posterior occlusal build-ups were built to control molar vertical position during the lower incisor intrusion phase.<sup>2</sup>
- Unilateral Class II elastics (Size ¼ in. - Force Rating Heavy 6 oz.) were used on the right side for 8 months, 12 hours a day, to center upper and lower midlines and to correct Class II molar and canine relationship.



Figure 8A-C: Treatment progress photos: Overlay intrusion arch.



Figure 9A-C: Treatment progress photos: unilateral Class II elastics.



Figure 10A-C: Treatment progress photos: finishing.

## Treatment results

Active treatment time was 19 months. No brackets were inadvertently debonded probably thanks also to the use of the 3M™ APC™ Flash-Free Adhesive System.<sup>3</sup>

An ideal occlusion<sup>4</sup> was achieved; ANB decreased by 3°; SN-GoGn decreased by 2° and upper and lower incisors were well positioned in relation to the APog line. Upper incisors moved forward 4 mm; lower incisors 6 mm and the interincisal angle decreased by 35° improving lip fullness and profile appearance. The gummy smile was eliminated and the negative buccal corridors were reduced.

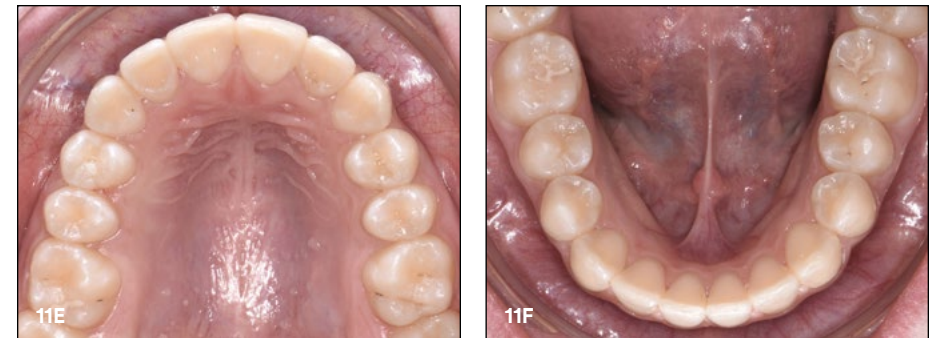


Figure 11A-I: Final photos.





Figure 12: Final X-ray.

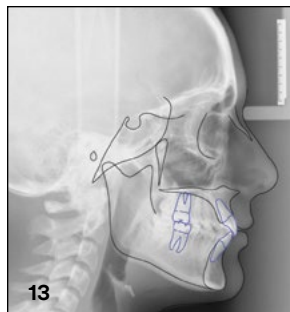


Figure 13: Final cephalometric radiograph and tracing.

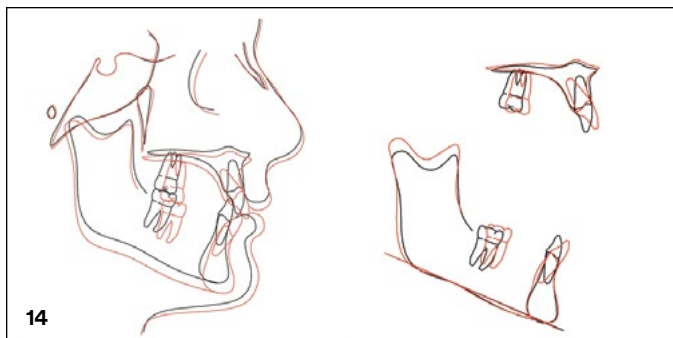


Figure 14: Cephalometric tracing superimpositions.

Cephalometric Analysis			
	Norm	Pre-Treatment	Post-Treatment
SNA	82°	79°	78°
SNB	80°	74°	76°
ANB	2°	5°	2°
SN-GoGn	32°	34°	32°
Palatal-Mandibular °	28°	24°	21°
U1 - APog	5 mm	1 mm	5 mm
L1 - APog	2 mm	-4 mm	2 mm
U1 - Palatal	110°	95°	114°
L1 - Mandibular	95°	80°	99°
U1 - L1	127°	161°	126°

Table 2: Final cephalometric analysis.

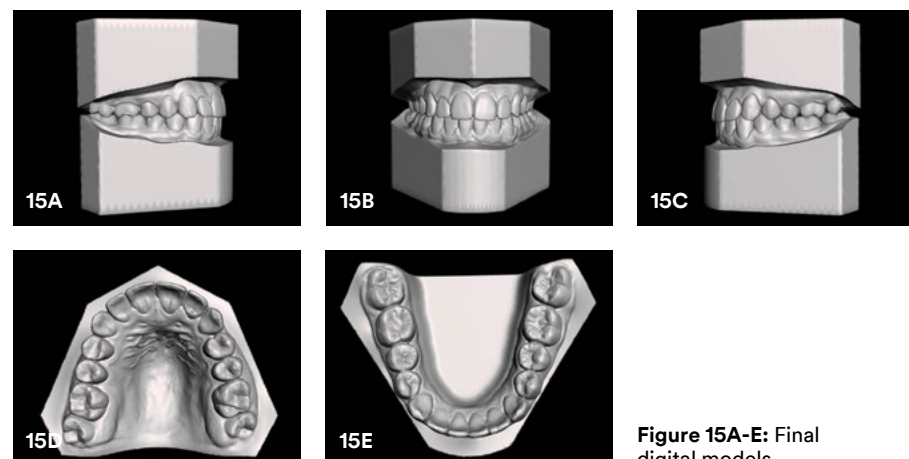
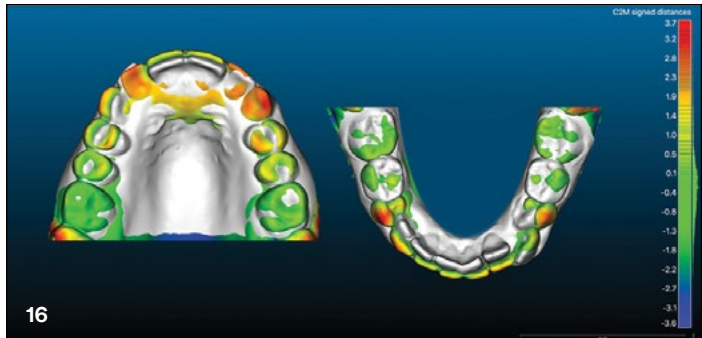


Figure 15A-E: Final digital models.



**Figure 16:**  
Digital model  
superimpositions.



**Figure 17A-D:** Initial vs. final photos.

## Conclusions

The most significant result in this case was the improvement in smile esthetics. The detailed information provided by the Digital Smile Design orthodontic planning was of great help in obtaining the final result. The precise control of tooth movement was obtained with a combined use of Clarity ADVANCED Ceramic Brackets, hi-tech Unitek Lateral Development Archwires and Beta III Titanium intrusion arch. The patient was extremely satisfied with both the esthetics of the orthodontic appliance used and treatment result.

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*Case photos provided by Dr. Riccardo Riatti.*

## 3M<sup>SM</sup> Health Care Academy

# A hybrid approach: Maximizing esthetics in a complex occlusion



**Jeremiah Sturgill, DMD, MPH, DHEd**

Dr. Sturgill began his academic journey by attending King University where he earned dual degrees in biology and business administration. He received his DMD, MPH, orthodontic certificate, and DHEd from Arizona School of Dentistry & Oral Health. He then moved to Richmond, Va. while his wife completed Endodontic Residency at Virginia Commonwealth University. While there he joined the faculty as an Assistant Professor for VCU Orthodontic Department and received his ABO certification. He then moved to his hometown and bought a practice with locations in Johnson City, Tenn., and Norton, Va.

### Introduction

Esthetic demands from patients has continued to place pressure on orthodontists and orthodontic manufactures alike. Previously, patients always felt orthodontic treatment was limited to “traditional braces.” As the adult population and esthetically-driven teen population continues to grow, options such as clear brackets, lingual appliances, and clear aligners have increased in popularity and demand. Orthodontists are pushed to be more creative in the treatment modality chosen for each case. In many situations, a hybrid appliance therapy can marry the biomechanical needs of the orthodontist and the esthetic needs of the patient. This case shows how the 3M<sup>™</sup> Incognito<sup>™</sup> Appliance System, 3M<sup>™</sup> Victory Series<sup>™</sup> Brackets, and 3M<sup>™</sup> Unitek<sup>™</sup> Temporary Anchorage Device (TAD) System can be utilized to treat a challenging clinical case esthetically.

### Clinical Case

A 25-year-old Asian female presents for consultation with a chief complaint of mandibular crowding. She has a non-contributory medical and dental history, except for a lateral periodontal cyst at #26, which was addressed by a periodontist and resolved uneventfully (Figure 1). She has a balanced facial profile with slight mandibular asymmetry, as her left gonial angle is more prominent. Her smile arc is consonant with 95% incisal display upon smile. Her profile reveals a straight facial profile, a protrusive lower lip relative to the E-line, and an acute nasolabial angle (Figure 2A-H).



Figure 1



Figure 2A-H

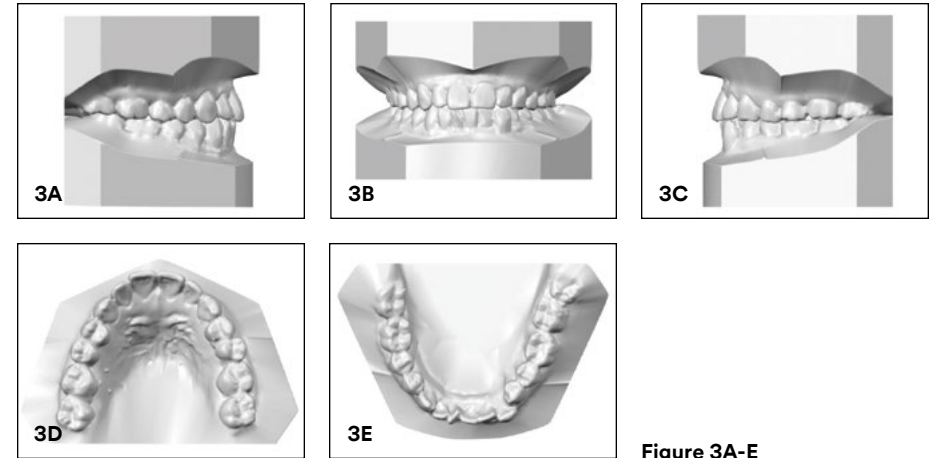


Figure 3A-E



Figure 4

	Value	Norm	Std Dev	Dev Nor
<b>Maxilla to Cranial Base</b>				
SNA (°)	80.2	82.0	3.5	-0.5
<b>Mandible to Cranial Base</b>				
SNB (°)	80.4	80.9	3.4	-0.2
SN – MP (°)	30.7	32.9	5.2	-0.4
FMA (MP-FH) (°)	25.4	23.9	4.5	0.4
<b>Maxillo-Mandibular</b>				
ANB (°)	-0.2	1.6	1	-1.2 *
<b>Maxillary Dentition</b>				
U1 – NA (mm)	10.6	4.3	2.7	2.3 **
U1 – SN (°)	112.4	102.8	5.5	1.7 *
<b>Mandibular Dentition</b>				
L1 – NB (mm)	8.3	4.0	1.8	2.4 **
L1 – MP (°)	95.1	95.0	7.0	0.0
<b>Soft Tissue</b>				
Lower Lip to E-Plane (mm)	2.0	-2.0	2.0	2.0 **
Upper Lip to E-Plane (mm)	-1.4	-5.0	2.0	2.3 **

Table 1

Intraoral exam reveals a Class III subdivision dental relationship with a 2 mm overjet and a 0.5 mm overbite (Figure 3A-E). Her mandibular midline is to the right of facial by 5 mm (Figure 2A-H). Her cephalometric radiograph shows a Class III tendency due to mandibular prognathism, proclined incisors, and a protrusive lower lip (Figure 4 and Table 1).



### Treatment Objectives:

The patient's chief complaint, "I want to align my midline and incisors," was pivotal in the treatment planning process. Therefore, the treatment planning objectives included establishment of Class I canines, alleviate crowding, attain ideal overjet/overbite, improve lip balance, and alignment of facial and dental midlines.

### Treatment options:

1. No treatment
2. Extraction of LL4, TAD placement for maximum anchorage, and finish Class III molar left
3. Extraction of LL2 with risk of black triangle and lack of midline alignment
4. Non-extraction with asymmetrical BSSO if facial asymmetry was the chief concern

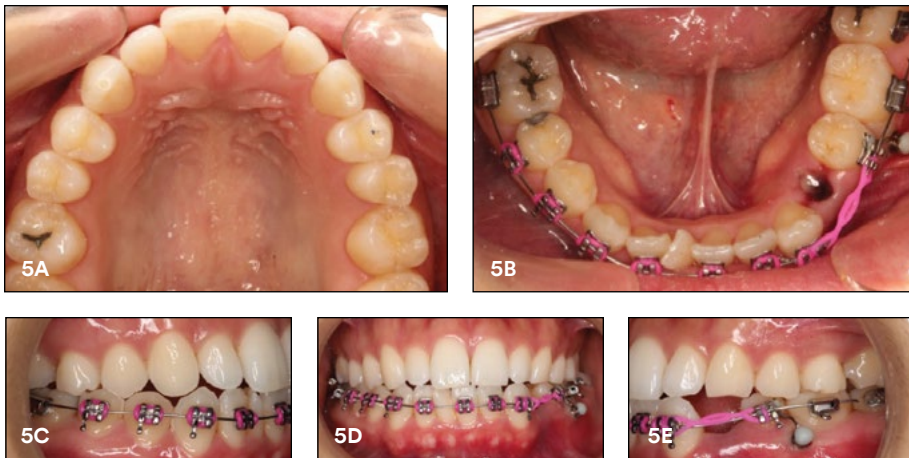


Figure 5A-E

### Treatment:

Patient opted for the treatment option #2 to extract LL4 and did not want any appliances to show on her maxillary arch. Her mandibular arch was bonded with 0.022 3M™ Victory Series™ Brackets (3M™ MBT™ System prescription) and an 0.014 Nitinol was placed. Since the vast majority of her orthodontic treatment was on the mandibular arch, the maxillary treatment was delayed (Figure 5A-E). After the extraction was complete, a 6 mm Unitek TAD was placed between the LL5 and LL6 and was bonded with flowable and an 0.019×0.025 stainless steel archwire to the LL5.

Figure 6A-E shows treatment progression at four months. To expedite the rotation of the LR1, a buccal and lingual button was added with buccal and lingual power chain to create a couple (Figure 7A-E). At nine months into treatment the maxillary arch was bonded with the Incognito Appliance and an 0.014 Nitinol was placed on the

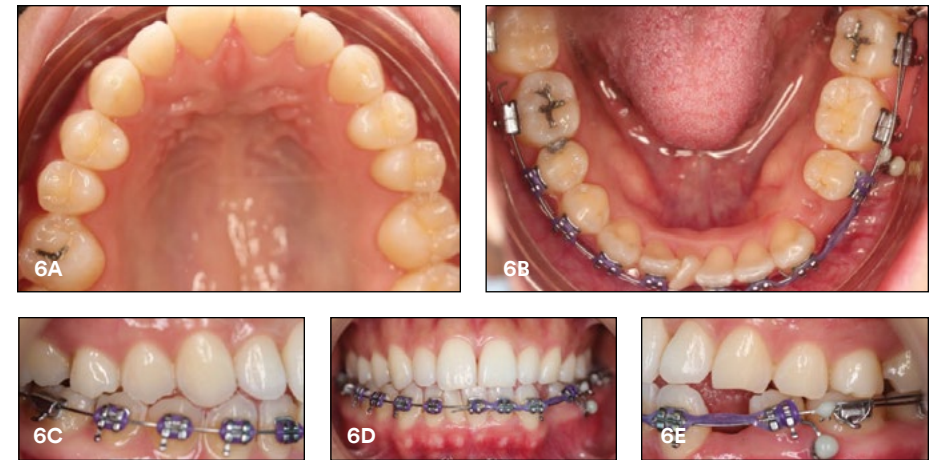


Figure 6A-E



Figure 7A-E

maxillary arch and a 0.016×0.022 Nitinol on the mandibular as the LR1 was engaged (Figure 8A-E). The case was finished with 0.016×0.022 Nitinol on the maxilla and 0.019×0.025 TMA on the mandible (Figure 9A-E). The case was completed in 18 months and retained with an individually bonded lingual retainer from LL5 to LR3 and maxillary and mandibular Essix (Figure 10A-H).

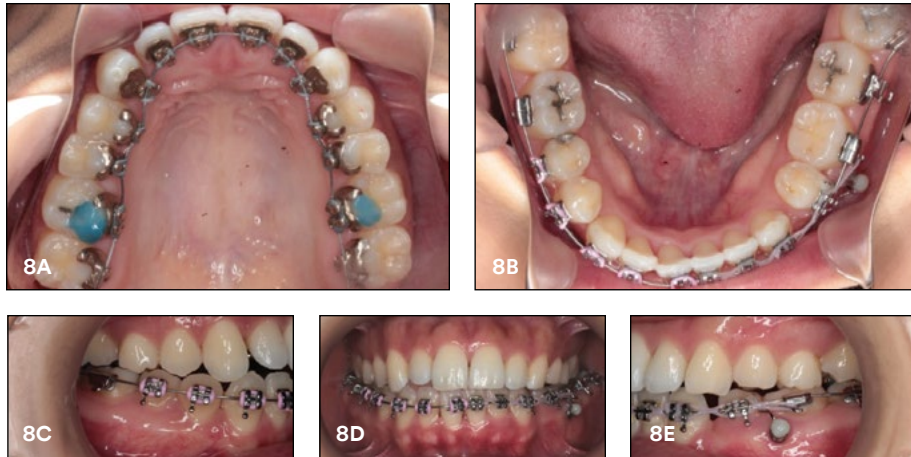


Figure 8A-E



Figure 9A-E

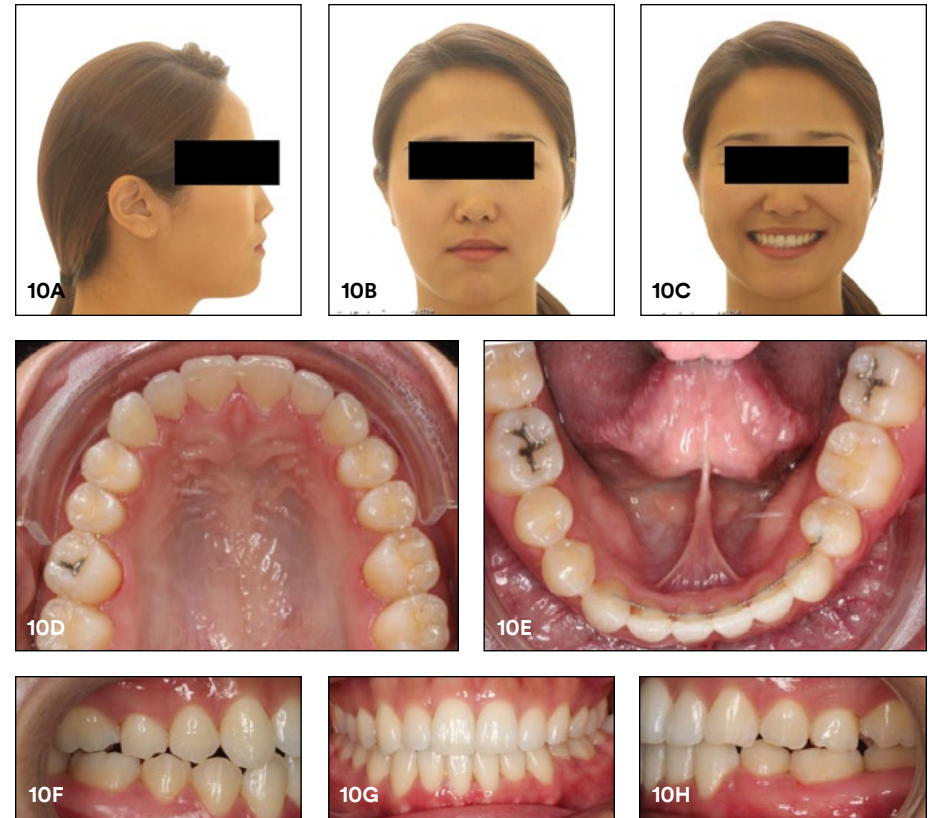


Figure 10A-H



**Evaluation:**

The panoramic progression can be seen in Figure 11A-C, which shows parallel roots at the extraction site. The final cephalometric and superimposition show retraction of the mandibular incisors along with retraction of the mandibular lip (Figures 12A-B). The facial profile change is subtle but notable (Figure 13A-B). The maxillary arch showed transverse development along with archform development (Figure 14A-B). Lastly, the substantial change to the midline alignment and achievement of the patient's chief complaint can be seen in Figure 15A-B.

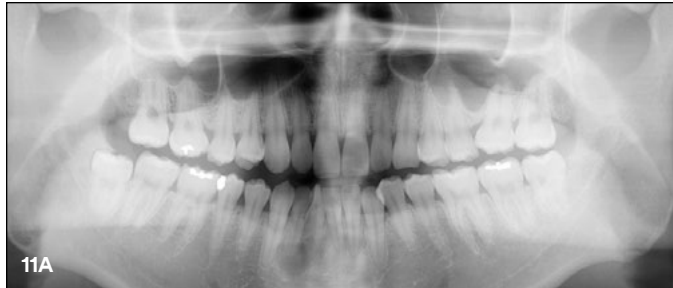
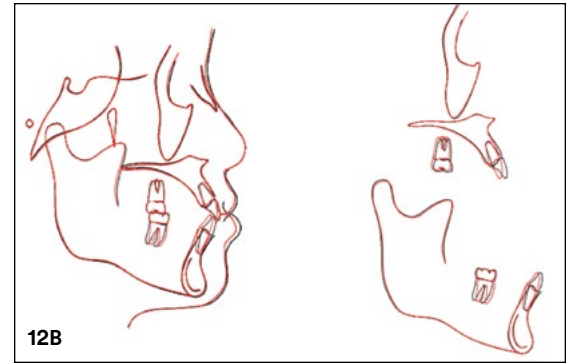
**Figure 11A-C****Figure 12A-B****Figure 13A-B****Figure 14A-B**



Figure 15A-B

### Conclusions:

This case demonstrates how a moderately difficult case can be esthetically treated without any compromises in the quality of result delivered. The use of auxiliaries such as a TAD when judiciously applied can increase treatment predictability. Lastly, the use of hybrid appliances and/or auxiliaries does not add time to treatment length, as the above case was treated in 18 months and 12 visits (bonding to debond).

*Case photos provided by Dr. Jeremiah Sturgill.*



## 3M<sup>SM</sup> Health Care Academy

# Improvement of the smile of a Class III adult patient using customized lingual appliance



**Omur Polat-Ozsoy, DDS, Ph.D.**

Professor Omur Polat-Ozsoy received her Dental Degree from Hacettepe University and Specialty Degree in Orthodontics from Selcuk University. She has been teaching and practicing at Baskent University since 2004. She is an active member of a number of professional organizations including American Association of Orthodontists, World Federation of Orthodontics

and Societa Italiana di Ortodonzia. Dr. Ozsoy serves as a reviewer to many national and international journals like *American Journal of Orthodontics* and *Dentofacial Orthopedics*, *Angle Orthodontist*, *European Journal Orthodontics* and *Korean Journal of Orthodontics*. Her academic interests include pain in orthodontics, skeletal anchorage, lingual orthodontics and indirect bonding.

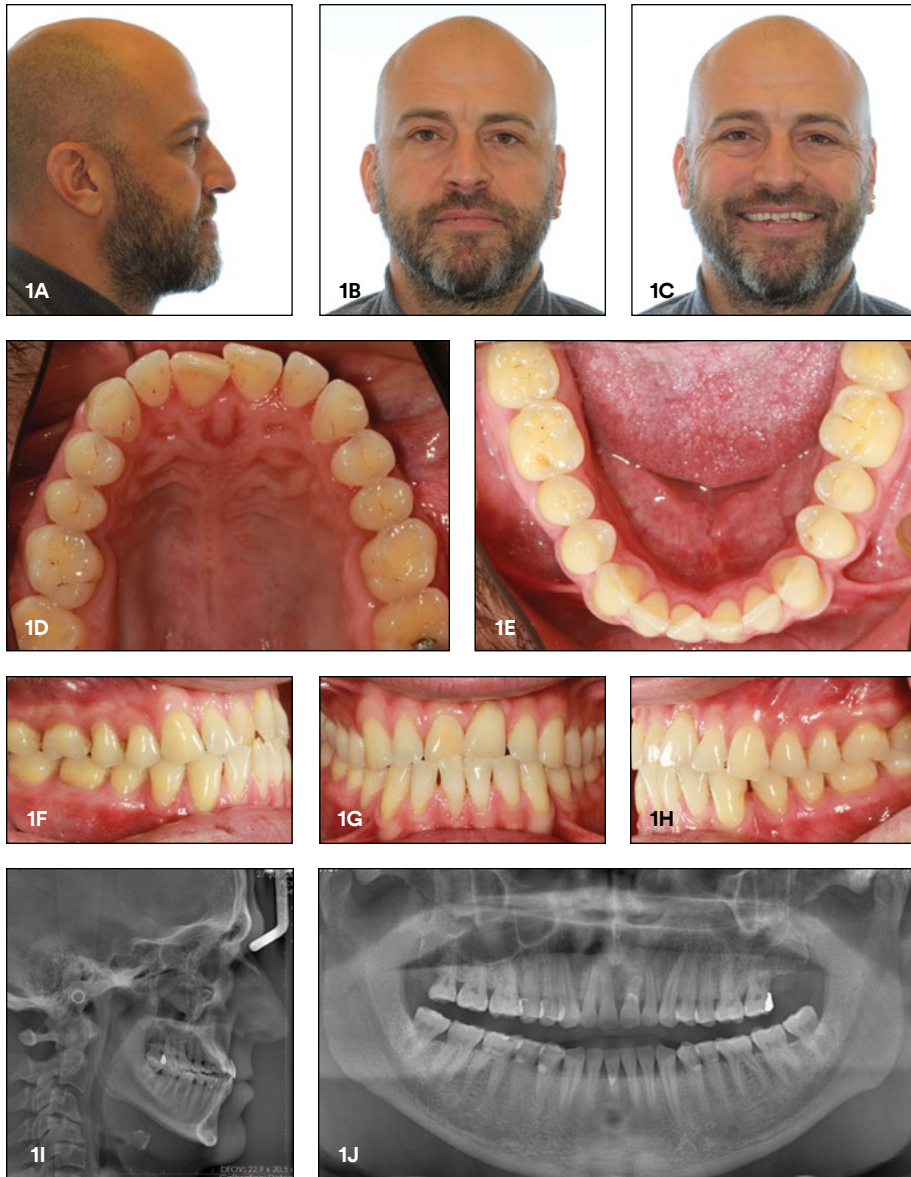
### Introduction

Esthetics is the primary expectation of most people when planning any dental treatment. Likewise, orthodontics plays an essential role in improving the patient's smile as well as providing better function. With the development of invisible orthodontic treatment options, more and more adult patients seek orthodontic treatment to improve their smile. Lingual orthodontics using customized appliances offers the most esthetic solution to treat all kinds of malocclusions in adults, with full 3D control of the dentition and complete invisibility. This case demonstrates the treatment of an adult Class III patient with a particular emphasis on smile esthetics.

### Case

A male patient, 46 years 3 months of age, presented to our clinic for the correction of his crowded anterior teeth. (Figure 1A-H) He had a mild skeletal Class III malocclusion that presented itself with a crossbite on both central incisors and the upper left and lower right central incisors showed gingival recession due to occlusal trauma resulting from the crossbite.

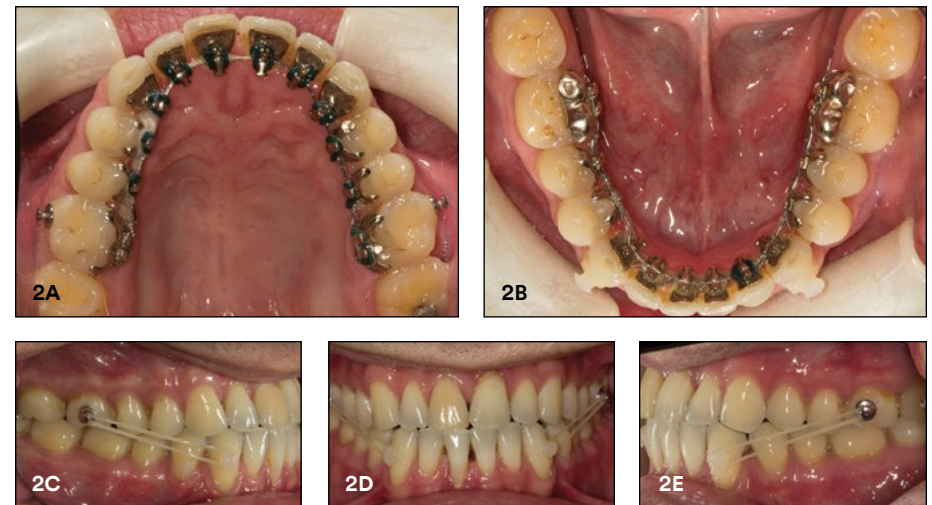
His smile analysis revealed insufficient exposure of upper incisors which caused the patient to look older than his current age and a flat smile arch. Correction of the crossbite was the main goal of the treatment and a minimal extrusion of upper front teeth was also planned as a secondary gain.



**Figure 1A-J:** Pretreatment photos and radiographs.

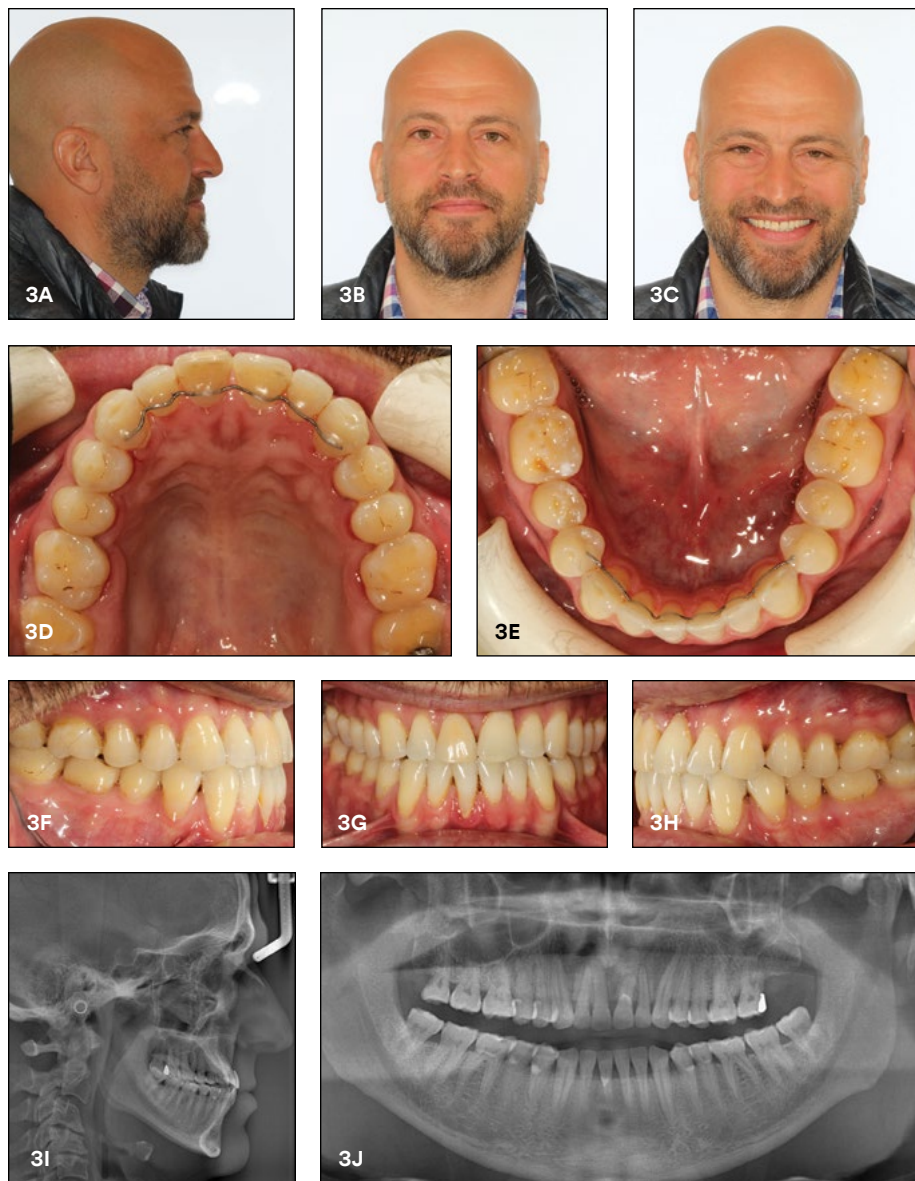
Radiographic evaluation revealed a healthy dentition with no missing teeth. (Figure 1I-J). According to the cephalometric analysis, the patient was a skeletal Class III patient with protrusion of upper incisors. Lower incisors were in optimal position. The patient had a high rate of esthetic expectancy from the appliances. Therefore, lingual treatment using the 3M™ Incognito™ Appliance System was offered.

After the initial bonding appointment, 0.014 NiTi SE archwires were placed. The further sequence of archwires were 0.016×0.022 NiTi SE, 0.018×0.025 NiTi SE and 0.016×0.024 Stainless Steel. Class III elastics were applied while steel archwires were in place from the buccal side, due to difficulty of hand manipulation of the patient on the lingual side (Figure 2A-E). The elastic cooperation was perfect and the elastics were worn for only three months. Interdental stripping was performed to lower anterior teeth with a perforated disk to provide further overjet. The finishing was achieved using a 0.0182×0.0182 archwire.



**Figure 2A-E:** Application of Class III esthetics.

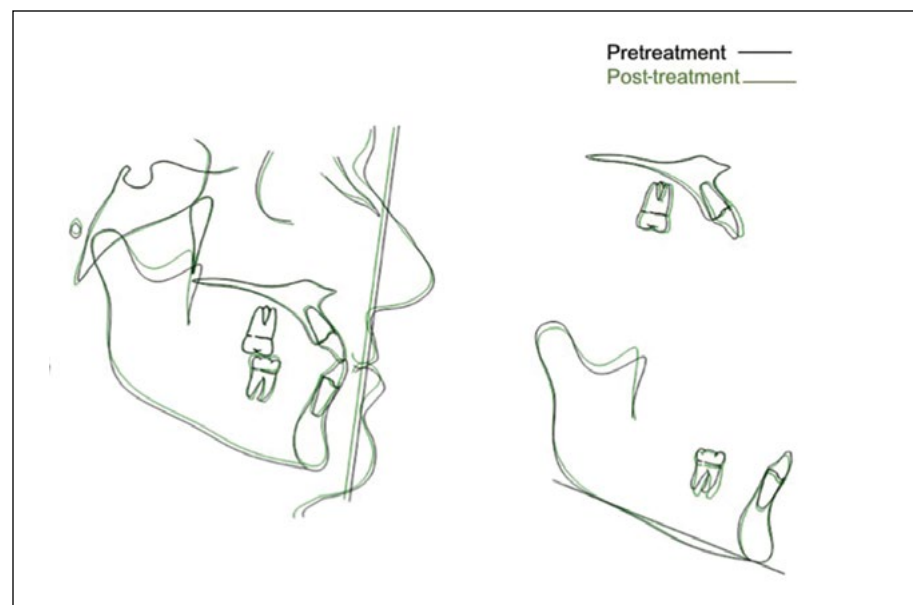
The treatment lasted 12 months. Upper and lower fixed retainers were placed at the time of debonding (Figure 3A-H). Post-treatment radiographs are given in Figure 3I and Figure 3J. Pre- and post-treatment cephalometric measurements are shown in Table 1. His cephalometric superimposition is shown in Figure 4.



**Figure 3A-J:** Post-treatment photos and radiographs.

	Pretreatment	Post-Treatment
SNA°	77.3	77.9
SNB°	81	81.1
ANB°	-3.6	-3.2
MP-SN°	30.9	31.9
U1-SN°	111.6	114.5
U1-NA°	34.3	36.6
U1-NA (mm)	9.9	11.5
IMPA°	90.9	88.4
L1-NB°	22.8	21.8
L1-NB (mm)	6	4.9
Ulip-Eplane	-9.1	-11
Llip-Eplane	-3.4	-5.9

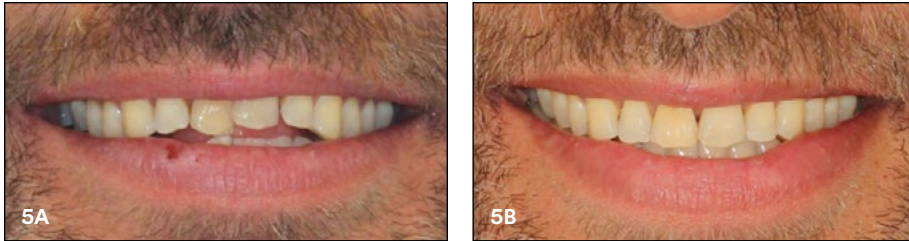
**Table 1:**  
Pre- and post-treatment  
cephalometric measurements.



**Figure 4:** Treatment cephalometric superimposition.



When the patient's pre- and post-treatment smile photos are examined, it is evident that the patient's showing more incisal display at the end of treatment (Figure 5A-B). This is partially achieved with slight extrusion of upper incisors that was requested when the initial order of Incognito Appliance was placed. Moreover, we can also see that his smile arch is quite parallel to his lower lip.



**Figure 5A-B:** Pre- and post-treatment smile comparison.

By using a fully customized lingual appliance, like the Incognito System, three major problems in lingual orthodontics were solved:

- Patient discomfort during the phase of adaptation: The appliance is designed as low profile as possible, not much higher than a bonded retainer; this significantly improves the patient's comfort.
- Inaccuracies during re-bonding: The customized bracket base covers the major part of the lingual tooth surface and therefore allows a direct re-bonding without the need for any other positioning aids.
- Difficulties in finishing: Inaccuracies of the slots due to production, and resulting variations in torque play, are a part of the past, thanks to the Incognito System. Measuring rates show divergences of not more than 0.008 mm between the slots. The precise-shape archwires also make high standard finishing easily achievable.

In conclusion, mild Class III treatment of an adult was successfully completed using Incognito brackets with further improvement of the smile.

## Patient Summary

### Dental Analysis

- Bilateral Class III malocclusion
- Crossbite of incisors
- Light crowding in both arches
- Insufficient upper incisor display

### Treatment Plan

Class III compensation treatment using upper/lower Incognito Appliance

### Wire Sequence

0.014 Superelastic NiTi; 0.016×0.022 Superelastic NiTi;  
0.018×0.025 Superelastic NiTi, 0.016×0.024 SS; 0.0182×0.0182 TMA

### Treatment Duration

12 months

### Retention

Upper/lower fixed retainers (3-3) 0.215 Multistranded Wire

*Case photos provided by Dr. Omur Polat-Ozsoy.*



## 3M<sup>SM</sup> Health Care Academy

# Successful treatment outcomes using 3M<sup>TM</sup> Clarity<sup>TM</sup> ADVANCED Brackets



**Patrice Pellerin, DMD, Cert. Ortho. FICD, FIADFE**

Dr. Pellerin received his post graduate Certificate in Orthodontics in 1991 from the University of Montreal. Before orthodontics, he practiced general dentistry for four years after earning his dental degree from the University of Montreal in 1985. Since 1991, he has maintained a solo private practice in Lachine, Quebec. In 1998, Dr. Pellerin converted his practice to a fully aesthetic practice. He is referred to by his peers as the grandfather of the completely aesthetic practice. He has lectured worldwide to share his

practice philosophy of highest aesthetics without compromise to accomplish treatment. Dr. Pellerin also currently teaches lingual and aesthetic orthodontics to the residents at the University of Montreal and University of Winnipeg. He has been an active member of the 3M Unitek Advisory Committee for Aesthetic Appliances since 2003, as well as a 3M Advocate for the use of aesthetic appliances since 2004.

### Case 1

**Class II, deep overbite with retrusive mandible,  
upper peg left lateral**

**Patient**

Female  
12 years, 5 months

**Patient's Main Concern**

The miniature tooth in the front

**X-ray Findings**

- Permanent dentition
- No evidence of wisdom teeth
- Asymmetrical condyles

**Dental Analysis**

- Class II, retrusive mandible
- Deep OB
- Upper midline discrepancy
- Microdontia of UL2

### Treatment Plan

- Upper – 3M™ Clarity™ ADVANCED Ceramic Brackets 0.018 slot – 3M™ MBT™ System prescription
- Indirect bonding using deepbite MBT System charts 4 mm (half bracket on UL2)<sup>1</sup>
- Band with occlusal headgear tube on UR6, UL6
- 5 months after lower Clarity ADVANCED Brackets 0.018 slot – MBT System prescription
- Indirect bonding using deepbite MBT System charts 4 mm + posterior bite opener<sup>1</sup>
- 3M™ Forsus™ Class II Correctors to correct the Class II
- Light Class II elastics to finalize the midline correction

Treatment	23 months (June 2013 – May 2015)		
Mx	June 2013	Indirect	14 SE (7s), 16×16 SE (7s), 17×25 Classic (48s), 16×22 SE (22s), 17×25 Classic to the end
Md	October 2013	Indirect	14 SE (6s), 16 SE (6s), 16×22 SE (6s), 16×22 SS (22s), 17×25 Classic to the end
# of visits	22		
Emergencies	1, UR6 band loose		

### Retention

- Essix upper retainer until build up of UL2
- Fixed lingual lower wire 0.018 TMA first bicuspid to first bicuspid
- Fixed upper lingual wire 0.018 TMA canine to canine after build-up

\*A Class II Hawley retainer<sup>2</sup> was supposed to be used but the patient moved abroad before delivery of her retainer.



Figure 1: Initial X-ray.



Figure 2: Initial cephalometric analysis.

Cephalometric Analysis					
SNA (°)	74.7	82.0	3.5	-2.1	**
SNB (°)	69.9	80.9	3.4	-3.2	***
ANB (°)	4.8	1.6	1.5	2.1	**
Maxillary Depth (FH-NA) (°)	85.4	90.0	3.0	-1.5	*
Facial Angle (FH-NPo) (°)	82.6	87.8	3.0	-1.7	*
FMA (MP-FH) (°)	16.8	24.7	4.5	-1.8	*
UFH:LFH, Upper (N-ANS/N-Gn) (%)	48.1	45.0	1.0	3.1	***
U-Incisor Protrusion (U1-APo) (mm)	-0.1	6.0	2.2	-2.8	**
U1 – Palatal Plane (°)	95.3	110.0	5.0	-2.9	**
L1 Protrusion (L1-APo) (mm)	-4.2	2.7	1.7	-4.0	*****
IMPA (L1-MP) (°)	99.9	95.0	7.0	0.7	
Interincisal Angle (U1-L1) (°)	148.7	130.0	5.0	3.7	***
Upper Lip to E-Plane (mm)	-2.6	-4.3	2.0	0.9	
Lower Lip to E-Plane (mm)	-2.8	-2.0	2.0	-0.4	
Nasolabial Angle (Col-Sn-UL) (°)	129.4	102.0	8.0	3.4	***
Maxillary length (ANS-PNS) (mm)	43.5	51.6	4.3	-1.9	*
Mandibular length (Go-Gn) (mm)	59.8	65.9	5.5	-1.1	*
Facial Convexity (G'-Sn-Po') (°)	160.3	154.0	5.6	1.1	*
Wits Appraisal (mm)	6.4	-1.0	1.0	7.4	*****
SUMMARY ANALYSIS					
Class II Molar Relationship					
Skeletal Class II (A-Po)					
Skeletal Class II (ANB)					
Retrusive Maxilla (A-N)					
Retrusive Mandible (Pg-N)					
Deep Overbite					

Table 1: Cephalometric analysis.

Initial

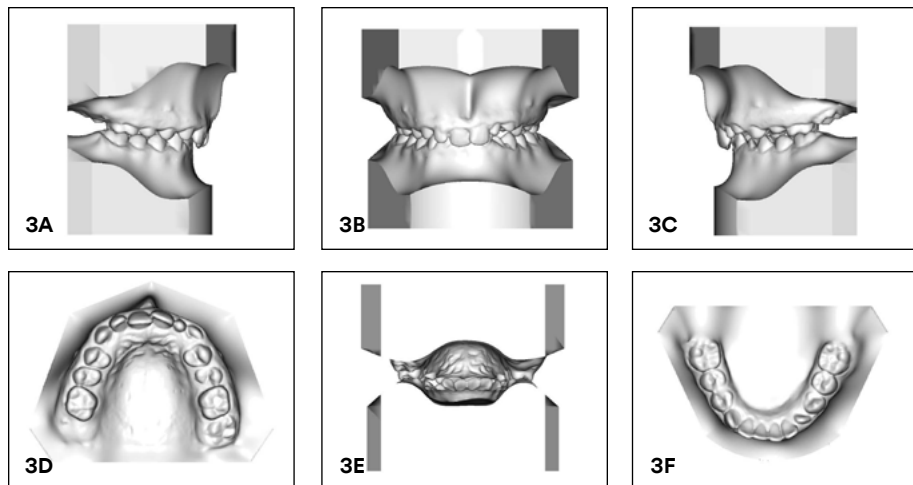


Figure 3A-F: Initial dental analysis.

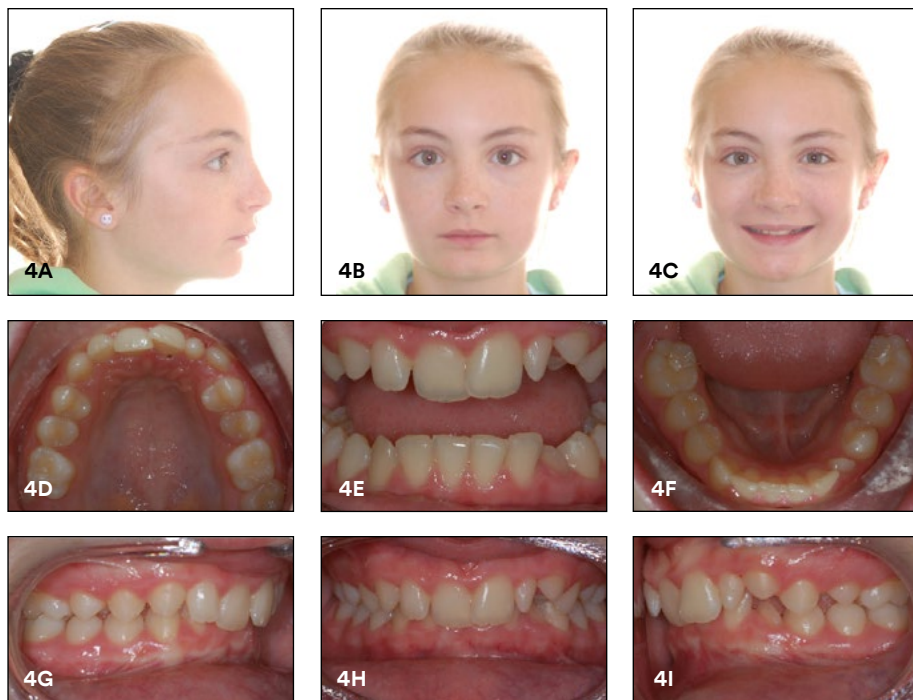


Figure 4A-I: Initial photos.

Mid-Treatment



Figure 5A-J: Mid-treatment photos.



## Retention

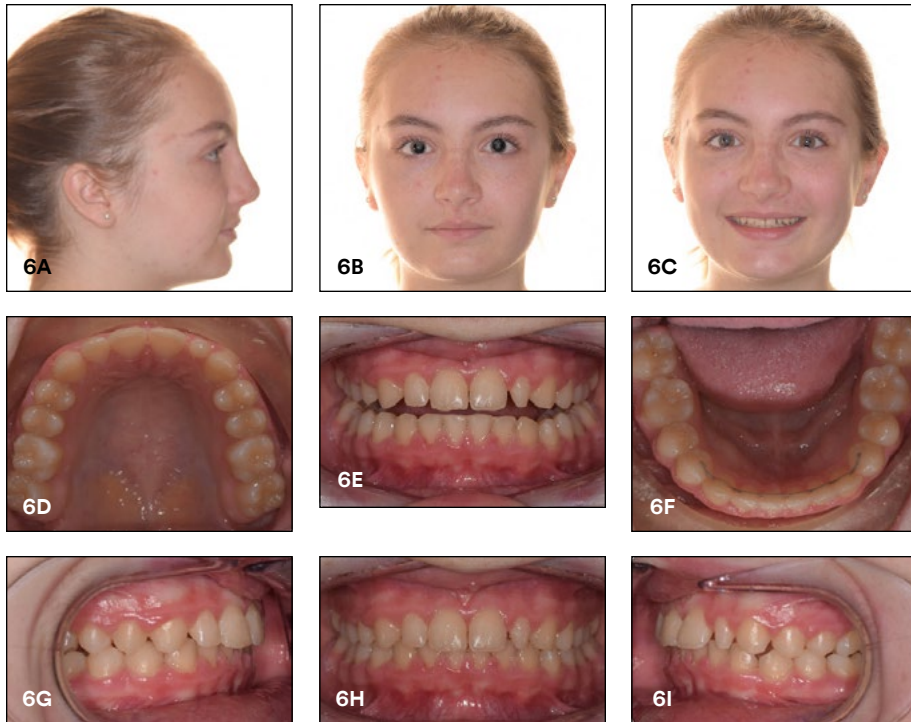


Figure 6A-I: Retention photos.

## Final

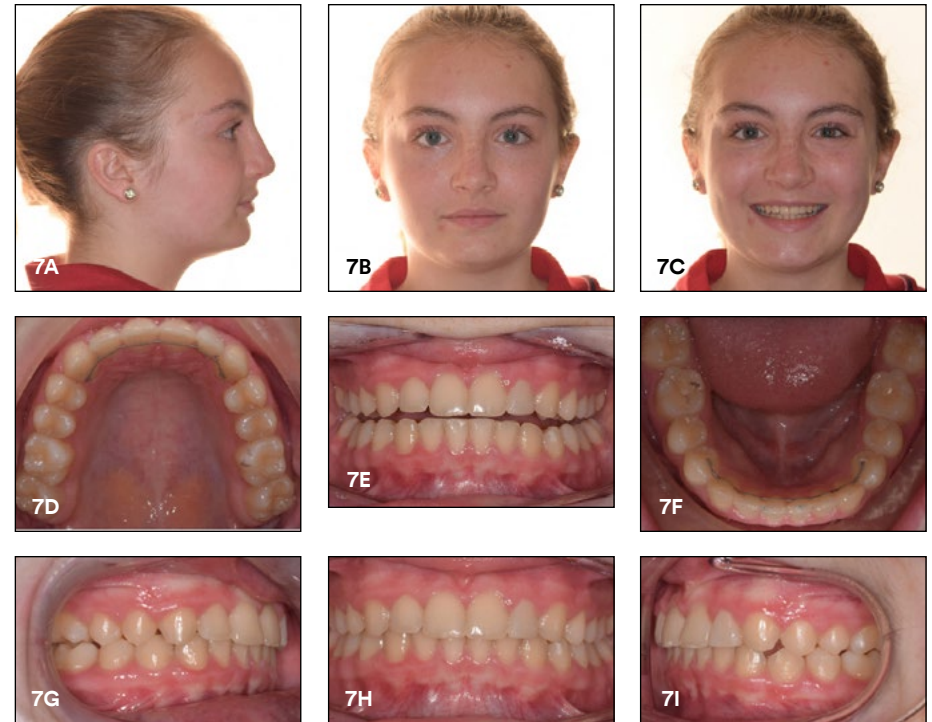


Figure 7A-I: Final photos.



Initial vs. Final



Figure 8A-B: Initial vs. final photos.



Figure 9A-B: Initial vs. final photos.

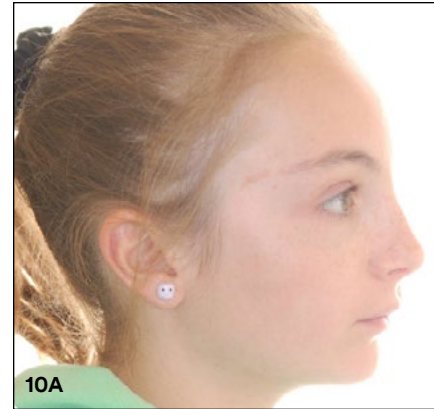


Figure 10A-B: Initial vs. final photos.

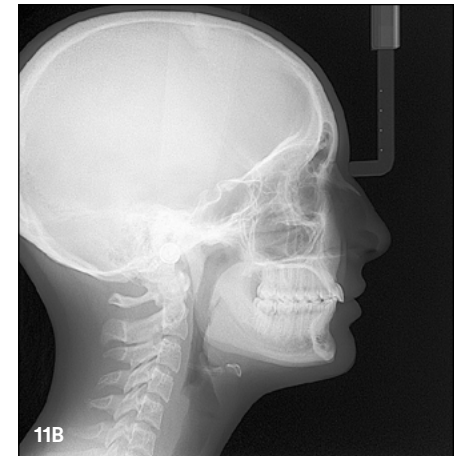


Figure 11A-B: Initial vs. final photos.

## Doctor's Notes

1. As many would point out, a deep bite case might contraindicate lower ceramic braces. This is another way of addressing the deep overbite and avoiding contact of the upper teeth with the lower braces: build bite opener in the molar region to open the bite just enough to eliminate contacts with the lower brackets.

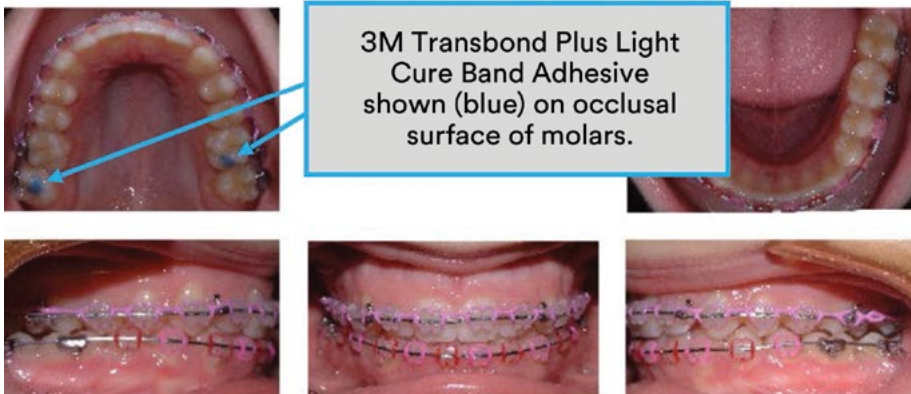
*This is not the same case but let's look at how to proceed:*

**Patient:** Male, 16 years 5 months.

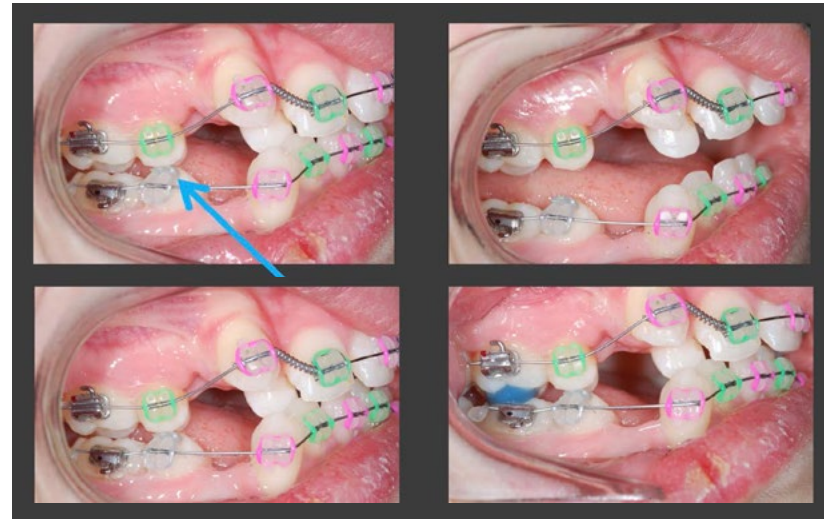
**Patient's main concern:** My canines are way too long and it is difficult to bite with my front teeth.



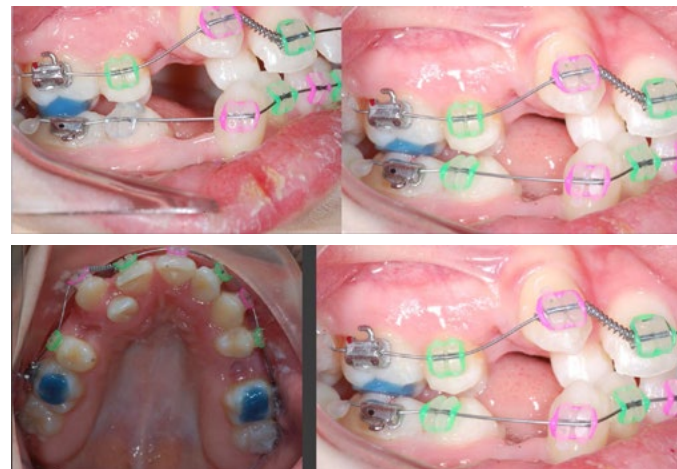
I use 3M™ Transbond™ Plus Light Cure Band Adhesive. I have found that this material is softer than enamel so it will wear away instead of damaging the enamel of the adjacent teeth. I recommend that you do not use composite, Transbond™ XT or even Transbond™ LR Adhesives, as these products might be harder than certain enamel.



Identify the tooth where you have the first contact and install a 3M™ Alastik™ Guard (see appendix) on that tooth. This will be your height gauge to build your posterior bite opener.



Once the bite opener is placed, you will need to adjust it and make a flat surface to allow lateral excursion and prevent joint (TMJ) problems.





### Initial



### Initial – Final



Ten years in retention, upper lingual fixed retainer 0.018 TMA cuspid-to-cuspid and lower lingual fixed retainer 0.018 TMA first bicuspid-to-first bicuspid. Notice that there is no long-term intrusion of the molars by the posterior bite opener.



2. Example of a Class II Hawley Retainer (not the same patient).



Case photos provided by Dr. Patrice Pellerin.

### References

1. McLaughlin, Bennett, Trevisi, "Orthodontic Management of the Dentition with the Preadjusted Appliance" pp 27-40; Systemized Orthodontic Treatment Mechanics, pp 55-65.

**Note:** Transbond Plus Light Cure Band Cement is not cleared for use as a bite opener and the performance claims are those of the clinician. Use of this product for this application is chosen at the discretion of the professional.

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