Stabilized Stannous Fluoride dentifrices are toothpastes of choice: Middle East dental consensus

By Dental Tribune MEA / CAPPmea

DUBAI, UAE: On 02-03 November 2017, a selected panel of ME elite dental academicians gathered for a two-day scientific consensus to discuss recommendations for best choice of toothpaste. This unique assembly took place at The Address Hotel, Dubai Marina, UAE. The results were presented live on stage at the 9th Dental Facial Cosmetic International Conference which took place at KH in Dubai Festival City on 03-04 November 2017.

The consensus was led by Professor Hien Chi Ngo, Dean of College of Dental Medicine of the University of Sharjah and Dr. Elias Berdouses, Board Member of Emirates Pediatric Dental Club. The consensus was achieved by the Delphi methodology (a structured survey approach conducted in multiple rounds of questionnaires and answers). It is regarded as a systematic, interactive questionnaire and answers. It is recommended that a Stabilized Stannous Fluoride based toothpaste may be recommended based on current literature. We recommend further scientific studies in the areas of peri-implantitis, root caries and dentine erosion. To increase compliance, oral health care providers should consider the effectiveness of products and patient specific needs regarding age, medical conditions, taste and texture. In conclusion, based on current literature we recommend that a Stabilized Stannous Fluoride based toothpaste is the toothpaste of choice.

Over the two days, the consensus culminated in the above recommendations which are agreed and signed off by expert panel Prof. Hien Chi Ngo – Moderator, Dean of College of Dental Medicine, University of Sharjah, UAE Dr. Elias Berdouses – Moderator, Board Member Emirates Pediatric Dental Club, UAE Prof. Crawford Bain – Chairman Periodontics Department, Hamdan Bin Mohammed College of Dental Medicine, UAE Prof. Arwa Al-Sayed – Chairman of the Consensus Group; Standing from left to right Dr. Eleftherios Kaklamanos, Prof. Elia Berdouses, Prof. Crawford Bain, Prof. Hien Chi Ngo, Dr. Ajay Juneja, Dr. Montaser Al-Qutub. Sitting from left to right: Dr. Samira Al-Osailan, Prof. Nada Naaman, Prof. Arwa Al-Sayed, Dr. Nofal Al-Musa

The consensus was achieved by the Delphi methodology.
LEIPZIG, Germany: Modern dentistry is moving in various different directions in a variety of fields—from toothbrush start-ups to online crowdfunding campaigns that are raising thousands of dollars for new ideas, such as a floating dental clinic in Cambodia. With so many interesting and inspiring concepts out there, Dental Tribune Online has decided to dedicate a series specifically focusing on the world of crowdfunding ideas, such as a floating dental clinic and reach out directly to individuals who might be inspired by the ideas and want to support it. People who sometimes have extraordinary ideas can set out to bypass the usual mainstream funding avenues and reach out directly to individuals who might be inspired by the idea and want to support it. People with new ideas can upload pictures, videos and descriptions to any number of online platforms that manage donations, allowing direct contact between the curator and the supporter—with a number of rewards offered to those who donate money towards the project. Across all these sites, the impetus is always the same: Someone has an idea and that person needs funding to bring it to life. This relatively new idea towards achieving goals and introduce innovative products to the wider public has seen some bedroom ideas be transformed into worldwide hits. It has also seen artists of all kinds introduce their work to the world, even allowing established musicians like Public Enemy to raise $75,000 for their new album. The success of crowdfunding has also landed within the dental industry and there is no shortage of ideas out there, to see just where the world of oral health might be headed. Could crowdfunding foster next dental revolution? Dental Tribune investigates.
Dentsply and Sirona have joined forces to become the world’s largest provider of professional dental solutions. Our trusted brands have empowered dental professionals to provide better, safer and faster care in all fields of dentistry for over 100 years. However, as advanced as dentistry is today, together we are committed to making it even better. Everything we do is about helping you deliver the best possible dental care, for the benefit of your patients and practice.

Find out more on dentsplysirona.com
Following a simpler path from prep to crown

By Dr Carlos Eduardo Sabrosa, Brazil

Indirect restorative procedures can be time-consuming and complicated: many different processes from impression taking to cementation are carried out in the dental office, and in each of them, different strategies may lead to success. However, some of the available materials and techniques will involve a lot of effort, while others enable users to proceed quickly and simplify the complete procedure. A simplified workflow from prep to crown that really makes life easier for the dental practitioner is described below.

Fig. 1: Initial situation. The failed composite restoration covering a large part of the left mandibular first molar’s occlusal surface needs to be replaced.

Fig. 2: Due to the size of the restoration, the amount of remaining tooth structure might not be sufficient to ensure the required stability for a direct composite restoration.

Fig. 3: Upon removal of the old filling, it becomes clear that a crown is needed to ensure the required stability. The tooth is built up with 3M™ Filtek™ Bulk Fill Posterior Restorative, which may be placed in conjunction with 3M™ Single Bond Universal Adhesive and in increments of up to 5 mm.

Fig. 4: Following tooth preparation, a temporary crown is produced chairside with 3M™ TempSure™ 4 Temporization Material. This material exhibits a high strength and a natural gloss without polishing.

Fig. 5: One week after the preparation procedure, healthy soft tissue conditions are obtained. They lay the foundation for a high-quality precision impression.

Fig. 6: In order to allow for a detailed capture of the preparation margins, the gingival tissues are retracted using the double-cord technique. Alternatively, a single cord may be applied in combination with 3M™ Adhesive Restorative Paste.

Fig. 7: Monophase impression taken with 3M™ Impregum™ Pentacure Soft Polyether Impression Material. A very detailed representation of the preparation margins is obtained with this simple technique.

Fig. 8: Situation at introral try-in of the crown. It is made of a 3M™ laval Zirconia coping and an IPS e.max Ceram (facile de Winder) porcelain layer. Ideal intraoral conditions (smooth margins, healthy tissues) are visible.

Fig. 9: Sandblasting of the crown’s intaglio surface to create a micrometric surface structure that is beneficial for cementation. This procedure is recommended for oxide ceramic materials.

Fig. 10: Application of self-adhesive resin cement into the crown. This proven product offers a simplified procedure since it eliminates the need for separate etching, priming and bonding.

Fig. 11: Situation after crown placement, removal of the excess cement and thorough cleaning. The crown blends in nicely with the surrounding tooth structure.

Fig. 12: At the check-up several days after crown placement, a great overall picture is obtained. The patient is happy with the final restoration in terms of aesthetics and function.

Comments

The described patient case shows that it is possible to significantly reduce the number of working steps in an indirect restorative procedure. In this way, potential sources of error are eliminated and chair-time is decreased. Key to success is the use of innovative, high-quality materials that offer ease of use and lead to increased efficiency in the dental office. These include the above-mentioned monophase impression material, the bulk fill composite, the temporization material that does not require polishing and the self-adhesive resin cement all offered by a single manufacturer.

*Relyx™ U200 self-adhesive resin cement in the MEA Region

3M Oral Care at SDS

By 3M

3M Oral Care participated in the Saudí International Dental Conference from 9-11 Jan 2017 held at the Riyadh International Convention and Exhibition Center.

3M’s presence at the Conference & Exhibition was through a specially designed booth with designated areas for customer hospitality, product displays and 3D holograms.

3M Oral Care displayed the complete range of products which is loved by millions of customers worldwide. These specifically included products such as Filtek™ Z250 XT Universal Restorative, Filtek™ Bulk Fill Posterior, Ketac™ Molar Glassionomer, RelyX™ Unicore Self-Adhesive Cement, RelyX™ Fiber Post 3D, Clarity™ Advanced brackets, and APC™ Flash Free systems to name a few.

3M core products like Single Bond Universal, RelyX™ Cement portfolio, Penta™ Impression portfolio, Temporization portfolio including Protemp™ 4, Stainless Steel Crowns, Peco Strip Crowns and the Orthodontic portfolio including Victory™ Series Brackets, TADS and Incognito™ were also on display at the booth.

3M also invited renowned speaker Dr. Federico Ferraris from Italy to give a lecture and workshop during the SDC. The lecture, titled ‘Composites vs Ceramic’ attracted a large number of visitors during the conference. The workshop was conducted on the premises of King Saud University and was attended by 28 eager learners.

3M Oral Care/3M Saudi Arabia

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- Ultrafine particle size. Elevated surface smoothness and density
- Impressive range of chroma dentines ensuring shade accuracy
- Low temperature firing. No chance of warpage or discoloration

**By Dr. Enrico Cogo, Italy**

3D rings are the real topic of Garrison's systems. The “V” shape of a ring that fits in the interproximal area allows a good fit between the cavity margins and the matrix in the buccal and palatal walls. This results in easier positioning of the composite masses close to the cavity margins, and final remodeling (usually necessary at the time of removal of the matrix) will be very minimal.

The rings also permit a divergence of the interproximal dental elements, which causes a great point of contact. Garrison systems make second class restorations more simple and more predictable and also reduce the operating time of the finishes when the matrix is taken off.

**Pre-op situation.** Patient needs to replace an old amalgam restoration on 1.5.

**Picture of the cavity after removing the amalgam restoration and after performing the cleaning of cavity.**

**Situation after removing ring, matrix and wedge.** Good position the matrix and the use of an adequate ring allows minimum interproximal finishing at the end of the stratification.

**Post-op view after polishing and check occlusion.** A good contact area is performed between elements 1.5 and 1.6.

**By Dr. Enrico Cogo DDS**

Dr. Cogo graduated from the University of Ferrara, Italy with a degree in Dentistry in 2005. Since 2006, he has been a visiting professor at the Dental School of the University of Ferrara. Dr. Cogo is also a frequent speaker at courses and conferences on dental bleaching and esthetics, as well as direct and indirect adhesive restorations. He is the author of several scientific articles in national and international journals, and with his associates, Pietro Sibilla and Roberto Turrini, wrote the book “Sbiancamento dentale: metodi per il successo,” edited by Quintessenza Edizioni and translated into German. Dr Cogo also has private practices in Legnago (Verona), Ferrara, Goito (Mantova) and San Giuseppe (Ferrara).
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SDR® Plus – The only bulk-fill material with multiple years of clinical success

By Dentply Sirona

In 2009, SDR® was the first technology that allowed grnm bulk placement in flowable consistency, providing an unmatched combination of consistency, excellent cav-ity adaptation, unique self-leveling and minimal shrinkage stress. Now, with the introduction of SDR® Plus, all the benefits of the SDR® technology remains plus expanded indications, more shades, improved wear resistance and increased radiopac-ity. While making Class I and Class II restorations faster and easier, the SDR® technology in SDR® Plus mate-rial still provides excellent long-term reliability in several 5 and 6-year clinical studies. In fact, the long-term survival rates of bulk fill restorations with SDR® technology proved to be equivalent to those of restorations done in the conventional layering technique, highlighting SDR® Plus as a quality and durable filling material.

Split mouth studies by J.W.V van Dijken and U. Pallesen

During the 6-year follow-up, a total of 98 Class I and Class II restorations were evaluated at recall 91 using just Ceram·X SphereTEC™ in the bulk-fill technique against 91 using just Ceram·X SphereTEC™ composite in the layering technique. The observers concluded that both restorative techniques showed good surface, marginal stability and col-our stability. They also mentioned that there was no statistically differ-ent annual failure rates between the bulk-fill and layering technique, and all restorations successfully resulted in no post-operative sensitivities.

SDR® Plus

The use of a 4mm incremental technique with the flowable bulk-fill resin composite showed during the 5-year follow up slightly bet-ter, but not statistically significant, compared to the conventional 2mm layering technique in posterior resin composite restorations.

36 month clinical trial results

by J. Burgess and C. Munoz

The initial study entailed 170 resto-rations where SDR® was bulk filled in increments of grnm and then capped using Dentply Sirona’s now discontinued composite material Esthet-X™ HD. Since the beginning of the trial the restorations have been individually evaluated at 12, 24 and 36 months. At each evaluation the parameters for assessment were fracture and surface defect, proximal contact, recurrent caries, sensitivity and gingival index. We are pleased to announce that the key findings of the clinical evaluation were as fol-lows:

- There were no failures attributable to SDR®.
- Acceptable performance with re-spect to safety and efficacy after 3 years.
- No post-operations have been re-ported related to SDR®.
- No recurrent caries associated with SDR®.
- No reports of adverse events.
- No adverse effects on the gingiva in contact with SDR®.

There were no observations of re-currence caries associated with the low stress resin and no reports of adverse events throughout the dura-tion of the trial.

Conclusion

With more than 50 million applica-tions since its introduction in 2003 and superior performance in clinical studies, it comes as no surprise that SDR® Plus has become the bulk fill technology of choice for the creation of reliable direct restorations.

For more information or to request a demo, please contact your local Dentply Sirona representative.

References


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Fig. 1: 6-Year Clinical data

SDR/Ceram X (n=92)
Survived: 88 Failed: 4
Ceram X (n=90)
Survived: 85 Failed: 6

“During the six year follow up, the bulk fill technique was proven to be a clinically safe technique; highly acceptable, clinically durable.”

Fig. 2: 5-Year Clinical data

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Located in Dubai Healthcare City – the largest healthcare freezone in the world
Platelet-rich fibrin can play an important role in oral and maxillofacial surgery, implant dentistry, periodontal regeneration and post-extraction site preservation. The fibrin is a reservoir of platelets that will slowly release growth factors and cytokines, which are the key factors for regeneration of the bone and maturation of the soft tissue. Platelet-rich fibrin (PRF) is an autologous platelet concentrate prepared from the patient’s own blood at the dentist’s office just before the oral/dental procedure.

Recent studies are focused on the development of natural therapeutic alternatives, which are easy to prepare, non-toxic or biocompatible to living tissues and economically inexpen-sive. The goal is the local release of growth factors, in turn accelerating hard and soft-tissue healing.

Platelet-rich fibrin (PRF) is an autologous platelet concentrate prepared from the patient’s own blood at the dental office just before the oral/dental procedure. By Dr Alvaro Betancur, USA

**Advantages of PRF compared with PRP**

1. **PRF has the presence of monocytes, leucocytes and other white cells that have an important role during the inflammatory phase of healing**
2. **PRF manufacturing requires minimum time from the doctor**
3. **PRF is used in invasive osseous surgery close to the eyes, ear, brain and in direct contact with bone, mandibular sinus, veins, arteries and nerves that could be adversely affected, if proper contamination control protocols are not followed.**
4. **All instruments used for the manufacturing of PRF should be sealed sterile and dropped into a sterile field separate from the instruments used for the removal of contaminated tissue, debridement of bone and teeth extraction. Two fields protocol will eliminate the risk of contamination of the PRF membranes, PRF sticky and PRF sticky bone that is going to be used for bone augmentation, as well as the PRF exudate that can be used as a sealant of the surgical site**
5. **Tourniquets, bandages, gauze, needles and blood collection tubes should be single-patient-use packs only. I use the blood collection tubes sterile pack (BCT®) from Boca Dental Supply, LLC**
6. **BCT® tubes are the only single-use, medical-grade packages for blood collection and manufacture of PRF. Discard any unused tubes should be discarded.**

The manufacturing of all blood concentrates at the patient’s site of treatment brings new challenges to the dentists and staff members. Infection control, staff training, education and research of the products used during PRF manufacturing. Handling patient’s blood and manufacturing blood products transforms the dental office into a blood bank facility where stricter crosscontamination control protocols should be followed in order to avoid doctors’ liability risks and to comply with federal regulations of the Center for Disease Control (CDC), OSHA and to perform at the standard of care protocols for surgery.

**How is PRF clot formed?**

After the blood is collected into the glass tubes and during the eight-minute centrifugation, the contact of blood coagulation factors with the natural hydrophilic glass surfaces activates the clotting cascade leading to the conversion of fibrinogen into fibrin forming a natural PRF clot.

If plastic tubes were going to be used for PRF clot, PRF membranes and PRF plugs, such tubes would likely have additives like silica and other dangerous chemicals to simulate the clotting characteristics of the natural glass, and the final product would be a chemically induced artificial PRF clot that will produce artificial PRF membranes and plugs.

The use of plastic tubes with silica coating and other chemicals to simulate the natural characteristics of the glass brings the challenge of not knowing what kind of damage the dentist would be causing to the patient’s health. The literature and research evidence has shown that silica and other coating with chemicals or additives used in laboratory blood collection tubes increase the risk of cancer and damage the DNA. The use of plastic tubes silica and other hidden additives could be detrimental and contradictory to the basic philosophy of PRF when it was adapted from cardiovascular and general surgery to dentistry. “No anticoagulants and no additives.”

More research is needed to determine the final damage of silica and other additives in the plastic blood-collection tubes to the grafted area and grafted bone at post-extraction sites, maxillary sinus, periodontal defects and all other boneaugmentation procedures. There is currently not available publication or research to evaluate possible cancer and systemic effects of silica and all other chemicals used to simulate the natural glass in plastic laboratory tubes when used for PRF manufacturing.

When plastic blood collection tubes without any additives are used for blood collection and centrifugation, we obtain liquid PRF that is used to apply to the sticky bone and transform it into PRF steaky bone. This improves the handling characteristics of the bone and aids in keeping the bone- graft material in solid form and preventing small particles of bone from migrating between the patient’s bone and periodontum. Migration of small particles of bone could be a cause of increased inflammatory response and swelling after surgery.

Because the time in the centrifuge is reduced to process blood in the plastic tubes to manufacture PRF liquid, less heat will be generated thus slowing a greater number of live white cells without degradation. This will accelerate the healing process, and it is also possible that when the blood is processed at 700 RPM or less, some stem cells could also be concentrated in the PRF liquid.

PRF is the newest and most popular technique to accelerate healing in dentistry. During most large implant dental conventions and meetings

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**Fig. 1. Boca Dental Supply blood collection tubes sterile pack are single-use, medical-grade packages for blood collecting and manufactur-ing of PRF. Discard any unused tubes.**

**Fig. 2. Doctor usually exemptes less than two minutes drawing blood.** (Photos/Provided by Dr. Alvaro Betancur)

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**Fig. 3: BPRF clots in the PRF box.**

**Fig. 4: PRF plugs.**

**Fig. 5: PRF sticky bone.**

**Fig. 6: PRF sticky bone.**
in oral and maxillofacial surgery, periodontics, OMS, endodontics, im- plantology and bone regeneration, the number of speakers presenting successful cases increases every year. We, as clinicians involved in regen- erative procedures and the manu- facturing of PRF, are obligated to use only materials and supplies that guarantee patients’ safety and, at the same time, eliminate the clinician’s liability risks.

Note
Dr. Alvaro Betancur is the creator of the Blood Collection Tubes Steri-Pack (BCTSP).

References
7) Platelet-rich fibrin. Its role in peri- odontal regeneration. Author Tejera Chandra Prasad Shridhar, Department of Periodontics, PM’s College of Dental Sciences and Research Centre, Golden Hills, Vattapara, Verkode (PO), Thiruvananthapuram 695028, Kerala, India, International Journal of Medical Sciences, Thiruvananthapuram 695029, Kerala, India. Received 28 June 2013. Revised 7 September 2013. Accepted 7 September 2013. Available online 20 October 2013.

Editorial note: This article was origi- nally published in Implants magazine 4/2017 (international C.E. magazine of oral implants).
Middle East expansion for world class oral hygiene brand

By Beverly Hills Formula

Beverly Hills Formula plans rapid expansion with distribution in new territories to further increase the brand’s presence as the number one market leader across the entire Middle East. The Irish-based oral hygiene company which currently retails in UAE, Jordan, Lebanon, Oman, Qatar, Kuwait, Bahrain, Iran and Saudi Arabia also seek new distributors in other Middle Eastern territories this year.

Product development plans are also underway with a new Perfect White Gold mouthwash, which follows hot on the heels of the award-winning Perfect White Black mouthwash.

And a new Professional Gold toothpaste that contains real gold particles with the Perfect White Gold toothpaste, helping provide that little extra element for the sophisticated consumer. This year, Beverly Hills Formula will also launch their first branded toothbrush with 3000 filaments, five times more filaments than ordinary toothbrushes, providing a more effective clean with less abrasivity.

Beverly Hills Formula’s Perfect White range is already widely recognised in the Middle East for their award-winning formulations, proven to remove up to 90% of stains without the use of harsh abrasives. In 2016, Perfect White Black mouthwash won Best New Personal Care product at the prestigious Grocer Awards in London and the following year they won Best Oral Beauty Product in the Pure Beauty Awards with their new Professional White Remineralising Serum.

The Perfect White range includes Perfect White Black, which is Beverly Hills Formula’s hero product. The toothpaste is scientifically formulated with Activated Charcoal known for its love of tannins – a compound found in coffee, tea, wines, berries and spices, all of which stain your teeth and helps reduce these without hurting your tooth enamel. The toothpaste also helps eliminate bacteria which causes bad breath and neutralises remaining odours, leaving your breath feeling fresh all day long. Perfect White Gold toothpaste contains actual gold particles known for its anti-bacterial properties, anti-inflammatory action and can also help increase blood flow. The advanced Hydrated Silica within Perfect White Gold offers a high performance whitening boost whilst the stain dissolving Pentasodium Triphosphate agent prevents food particles settling on the teeth. For extra stain removal, the anti-tartar ingredient Tetrasodium Pyrophosphate prevents food particles settling on the teeth. For extra stain removal, the anti-tartar ingredient Tetrasodium Pyrophosphate prevents food particles settling on the teeth. For extra stain removal, the anti-tartar ingredient Tetrasodium Pyrophosphate prevents food particles settling on the teeth.

“I thought was a great idea and I love it was a little weird, but with the addition of charcoal in the toothpaste I thought it was a great idea and I love it.”

For over two decades Beverly Hills Formula has evolved and expanded its range with whitening toothpastes and mouthwashes to suit all oral hygiene needs. With CEO Chris Dodd at the helm, who has over 20 years’ experience and a well-earned reputation as an expert in his field, the company owns much of its considerable rise, especially in the past few years, to his innovative new product development.

Chris said the Middle East is one of the most successful regions for the brand, which retails worldwide, and plans to build on that success at the forefront of the company’s strategy for 2018.

“This year our main focus is expanding in the Middle East and building on our current success in Jordan and Iran as we seek to establish distribution outlets in Egypt and Qatar. We were recently developing additional products to enhance our Perfect White and Professional White ranges, including Perfect White Optic Blue toothpaste, a Perfect White Gold Mouthwash and Professional Gold toothpaste.”

Perfect White Black Mouthwash is the first of its kind, ‘shave to activate’ mouthwash, scientifically formulated with Activated Charcoal to help remove surface and deep stains. Perfect White Black Mouthwash also helps to eliminate bacteria causing bad breath and neutralises remaining odours, leaving your breath feeling fresh all day long.

When I look for toothpastes or mouthwashes, I search for products that protect the teeth from acids and hence from cavities. I value a product that can fight the bad bacteria in combination with cleaning and whitening the teeth without abrasion and also allows for recovery of the enamel whilst leaving a fresh and clean feeling.”

“Had the chance to use Beverly Hills Formula’s Perfect White toothpaste a few years ago and it was the first time I used black toothpaste to clean my teeth. Initially it was a little weird, but with the addition of charcoal in the toothpaste I thought it was a great idea and I love it.”

Chris explained the reason for the brand’s success and how is it has managed to maintain a market presence for over 20 years, despite the hugely competitive increase in new oral hygiene brands internationally.

“We believe in our products because we know they work. We may not be the largest oral hygiene brand globally, but we are one of the most established. Beverly Hills Formula are innovators, not imitators, and our teams are constantly improving the formulas and product range.

“The simple fact that Beverly Hills Formula has managed to remain leaders in the market for so long has earned the brand the respect and success we have today and we will continue to work hard to maintain that.”

Leading Dental School (UK)

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“We believe in our products because we know they work. We may not be the largest oral hygiene brand globally, but we are one of the most established. Beverly Hills Formula are innovators, not imitators, and our teams are constantly improving the formulas and product range.

“The simple fact that Beverly Hills Formula has managed to remain leaders in the market for so long has earned the brand the respect and success we have today and we will continue to work hard to maintain that.”
New Cutting-Edge Oral Care Products From The Teeth Whitening Experts

- Formulated with professional teeth whitening ingredients
- Developed to help you achieve professional results in the comfort of your home

Toothpaste Stain Removal Leading Dental School (UK)

<table>
<thead>
<tr>
<th>Product</th>
<th>Percentage Stain Removal</th>
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<tbody>
<tr>
<td>Beverly Hills Formula Professional White Black Pearl</td>
<td>69.7%</td>
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<tr>
<td>Beverly Hills Formula Perfect White</td>
<td>65.4%</td>
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<tr>
<td>Beverly Hills Formula Perfect White Black</td>
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<td>Beverly Hills Formula Professional White Pink Pearl</td>
<td>61.4%</td>
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<tr>
<td>Colgate Sensitive Pro-Relief &amp; Whitening</td>
<td>51.6%</td>
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<td>Colgate Max White One</td>
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<td>Arm &amp; Hammer Advanced White Extreme Whitening</td>
<td>40.5%</td>
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<tr>
<td>Corgate Max White with microcrystals (crystal mint)</td>
<td>34.7%</td>
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<tr>
<td>Sensodyne Rapid Relief</td>
<td>26.6%</td>
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<tr>
<td>Oral-B 1-2-3</td>
<td>25.1%</td>
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<td>Sensodyne Repair and Protect</td>
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<td>Oral-B Pro-Sensitive</td>
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<td>Curaprox Black is White</td>
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<td>Sensodyne ProEnamel Gentle Whitening</td>
<td>9.4%</td>
</tr>
<tr>
<td>Deionised Water</td>
<td>1.5%</td>
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</tbody>
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Purity Laboratories Ltd
Unit P1 P2 North Ring Business Park Swords Road Clongriffin Dublin 9 Ireland Tel: +353 1262 4663 Email: info@purityformulas.com Web: www.purityformulas.com
By Philips Sonicare

At Philips Oral Healthcare, we take tremendous pride in the quality of our work. Refurbishing every Philips Sonicare product is a global team of dedicated and experienced people collaborating across a spectrum of disciplines that span the continuum of production processes.

Our aim is to be an extension of the Dental Practitioner in patients’ homes, providing oral hygiene tools that meaningfully improve and sustain oral health, consistent with the goals that you set together with your patients. It is with this standard in mind that we critically evaluate the safety and efficacy of the products in our pipeline. You, and your patients, deserve a foundation of evidence from which decisions about home care procedures and regimens can be made. Whether it’s that patient whose gingival tissue could benefit from more thorough plaque biofilm removal, or that patient who just can’t seem to sustain a daily interproximal cleaning habit, we take a patient-centered, evidence-based homeowner as seriously as you do.

In a Special issue of the Journal of Clinical Dentistry, five full manuscripts provide this foundation of evidence by detailing the outcomes from four clinical trials, and one meta-analysis, in which the safety and efficacy profile of Sonicare innovations have been critically examined by Dr. Maha Yakob, the Director of Professional Relations and Scientific Affairs at Philips Oral Healthcare, and at Philips. At Philips, we strive to instill an evidence-based mindset in our product development process.

We partner with Dental Professionals to provide oral health solutions to patients that are demonstrated as safe and effective, through rigorous examination of clinical trials and published in peer-reviewed journals. The five articles contained in the Special issue of the Journal of Clinical Dentistry underscore these important points, providing Dental Professionals a transparent look into the clinical data that forms the basis of a suite of safety and efficacy evidence.

Taking a high-level view, the five articles focus on the effect of Philips’ products on surface plaque removal, gingival bleeding and inflammation. We have long known that the plaque coating teeth surfaces is its own, dynamic microenvironment, where there exists a spectrum of bacterial species and their byproducts that are health or disease-associated. And we know that the character of these biofilms can affect whether the adjacent tissue, the gingiva, is healthy. As such, the clinical trials reported in the Special issue focus on these important clinical endpoints.

Key facts

In the first manuscript which reports a randomized, parallel-design clinical trial, the Philips Sonicare DiamondClean powered toothbrush was observed to be statistically significantly superior to use of a manual toothbrush, within 2 weeks of use, persisting to study conclusion at 4 weeks, in reducing surface plaque, gingivitis and gingival bleeding.

Similar outcomes were also observed in a clinical trial comparison between the Philips Sonicare FlexCare Platinum with Premium Plaque Control brush head, and a manual toothbrush, following 2 and 6 weeks of use. For example, by the Week 2 visit following use of the assigned product, the mean percent reduction from Baseline in the assessment of gingival bleeding was 42.95% for the Sonicare group, and 8.64% for the manual toothbrush group.

The third manuscript reports on a meta-analysis that was initiated to determine whether these discrete observations of differences in plaque and gingivitis reduction between ‘sonic’ powered and manual toothbrushes, were supported in a broad investigation of publicly available literature. The study authors queried multiple publicly accessible databases for clinical trial outcomes using a pre-defined set of keywords. Thereafter, they performed a comprehensive analysis of the results. The paper, which includes data from 18 studies, also concludes that use of a high-frequency, high-amplitude sonic-powered toothbrush is superior to manual toothbrush use in reducing plaque and gingivitis.

The fourth manuscript reports on a comparison between two powered toothbrushes: the Philips Sonicare FlexCare with Premium Plaque Control brush head, and the Oral-B Pro-5000 with Cussonation brush head. The outcomes of this large clinical trial demonstrated that the sonic powered toothbrush performed significantly better than that Oral-B power toothbrush in reducing surface plaque, gingivitis and gingival bleeding, following 2 and 6 weeks of use when used in respective daily clean mode. In addition, the study analysis also included an insightful proportion analysis, where the percentage of subjects who achieved at least a 20% reduction in gingivitis at Week 2 and Week 6, was significantly better in the Sonicare than the Oral-B group.

The final manuscript provides important clinical evidence demonstrating the efficacy of the Sonicare Airfloss Pro interproximal cleaning device. The device was developed with the ‘non-flosser in mind, that patient who just can’t seem to adopt a flossing regime, but who really needs better interproximal oral hygiene. As such, the study was designed to show that manual toothbrushing, followed by once-daily interproximal cleaning with Sonicare Airfloss Pro used with antimicrobial rinse, at least as good as manual toothbrushing followed by once-daily string floss use, in reducing plaque and gingivitis.

The study outcomes demonstrated that this is, indeed, the case at both the Week 2 and Week 4 timepoint.

With each innovation at Philips Oral Healthcare, our collective efforts have a single overriding goal to provide your patients the very best tools to optimize their oral health. Subjecting our products to rigorous evaluation in a clinical trial setting is the key step to establish that this is the case. Dr. Yakob comments, “We invite you to read the entire Special issue of the Journal of Clinical Dentistry so that you can critically examine this process for yourself. I am deeply committed to an innovation trajectory that starts with the individual professional, and ends with clinically validated, meaningful results experienced by patients. The five manuscripts in the Special issue are excellent proof-points of this process.”

You can download the full issue here: https://www.usa.philips.com/cen-po/dentalprofessionals/resources_and_education/professional-education-clinical-studies

For more information visit philipsoralhealthcare.com
An oral care system of sonic proportions

The new Philips Sonicare DiamondClean Smart toothbrush

The cleaning, gum care, stain-removing, patient-coaching, habit-forming, confidence-boosting, better check-up complete oral care system.

Smart Sensor Technology
Personalized coaching for better coverage, reduced scrubbing and ideal pressure via the Philips Sonicare app.

Smart Brush Head Recognition Technology
Automatically chooses the optimal mode and intensity level and monitors brush head lifetime.

High Performance Brush Heads
Up to: 10x better plaque removal, 7x healthier gingiva\(^1\) and 5x more stain removal\(^2\).

For further information please contact:

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Kuwait – Ultramed
Tel: +965 222 169 50
bouchra@ultramed-kw.com

Learn more about Philips Sonicare DiamondClean Smart at philips.ae/c-\-p/HX9924_06/

1. vs. a manual toothbrush
2. vs. a manual toothbrush using a leading whitening toothpaste

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A combined digital orthodontic and restorative approach

Case Study:

By Dr Andrew Culbard, UAE

Traditionally cosmetic dentistry was a term associated with the placement of crowns and veneers in the aesthetic zone, with many dentists adopting an aggressive preparation approach in order to facilitate the placement.

Advances in cosmetic orthodontics and digital dentistry, coupled with a change in mindset towards prioritising the preservation of tooth structure has lead to many patients presenting for a cosmetic solution for their smile to undergo a multidisciplinary approach.

The Patient, a 21 year old female presented for cosmetic improvement of her teeth. In her own words, she wanted a wider and brighter smile with bigger teeth.

Clinically the following issues presented:
1. Peg laterals and canines in the upper arch, with a generally anesthetic tooth morphology throughout
2. Spaced upper arch with a lack of symmetry and some minor rotations on the canines
3. Lower arch had mild crowding
4. Starting shade was A3
5. The gingival zeniths were uneven, with some recession and a lack of keratinized tissue.

A treatment plan was constructed based on a facially driven smile design, with calibrated images measured against the invisalign clincheck software. The benefit to using a digital system here was to allow for accurate positioning of the anterior teeth for minimal preparation and the ideal restorative outcome. (Figs. 1a-f)

A 7 week invisalign programme allowed for enough movement in the upper arch, while resolving the mild crowding in the lower arch. The final tooth position can be seen in figure 1f.

Post-ortho provisional retention was implemented with removal essix retainers which were used for home whitening of the upper and lower teeth. A final shade of BL3 was achieved, after 10 days of rehydration in this time the lab created a diagnostic wax up guided by the smile design. A putty matrix was used to transfer the wax up to a trial smile (Fig. 2).

Once the trial smile was approved by both patient and dentist, the acrylic was used as a guide for crown lengthening on the UR2, and then as a preparation guide for the APT technique (Fig. 3a-d).

The final restoration from UR4- UL4 were created from pressed Emax and cemented using Variolink LC neutral. Finally, definitive essix retainers were constructed for retention.

Andrew Culbard BDS
MJDF RCS Eng
General & Cosmetic Dentist
He works at the Dr. Roze & Associates Dental Clinic

Dr. Andrew graduated from the University of Glasgow Dental School in Scotland. He further pursued post-graduate training in a number of other dental specialities to ensure a diverse and well-rounded complement of skills and knowledge. After 2 years of graduating, Andrew was awarded membership to the Royal College of Surgeons of England. His interest in cosmetic and aesthetic dentistry has been his passion throughout his career.

Digital Orthodontics Symposium

04 May 2018
Madinat Jumeirah Conference Centre
Dubai, UAE
Certificate & Diploma in Clinical Endodontics

From British Academy of Restorative Dentistry

DUBAI 2018-2019

Certificate | 3 Modules | 12 Days
Module 1 | 22-25 February 2018 | Fundamental of Endodontics
Programme outline: Introduction to contemporary endodontics. Understanding of instrument design and its effect on prevention of iatrogenic errors.
Hands-on: Hand filing and lateral compaction techniques.

Module 2 | 26-29 April 2018 (4 days) | Aetiology and Diagnosis of Endodontic Disease
Programme outline: Microbiology of endodontic disease and its relationship with the host immune response.
Hands-on: Rotary Niti and advanced thermoplastic obturation techniques.

Module 3 | 16-19 August 2018 (4 days) | Traumatic Injury, Pain and Its Management
Programme outline: Emergency endodontics and diagnosis in depth. Odontogenic and non-odontogenic pain. Diagnosis and management.
Hands-on: Rotary NiTi and thermoplastic obturation techniques.

Diploma | 3 Modules | 12 Days
Module 4 | November 2018 (4 days) | Dental Resorption and Pattern of Tooth Fracture & Implant Prosthodontics
Programme outline: Understanding advanced endodontic problems. Handling endodontic failure alternatives related to implants.
Hands-on: Reciprocating Niti and Carrier based thermoplastic obturation techniques & Implant prosthetic and surgery on phantom heads

Module 5 | February 2019 (4 days) | Restoration of Endodontically Treated Teeth
Hands-on: Placement of core restorations and post retained restorations.

Module 6 | May 2019 (4 days) | Management of Endodontic Failure
Programme outline: Endodontic retreatment, surgical endodontics.

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Introducing the first CLASS II SOLUTION™

For successful Restorative Outcomes.

By Dentsply Sirona

Class II restorations are more important to your practice that you may think – almost 70% of annual dental patients receive direct restorations, nearly 50% of direct restorations placed are Class IIs¹. Getting them right the first time is the key to happy patients and practice profitability. The new Class II Solution™ by Dentsply Sirona is the only comprehensive Class II approach for more efficient clinical outcomes and bottom-line results.

Many clinicians have developed the habit of assembling their own Class II system using an assortment of products and materials from different manufacturers. While this approach can play out successfully, it can also lead to unpredictable outcomes. By establishing an all-encompassing direct restoration system, dental professionals can confidently control every step of the process while rendering precise, predictable results each and every time.

Dentsply Sirona is offering the complete Class II Solution™ – a portfolio of products designed to work together to deliver success at the most vulnerable interface (the floor of the proximal box) – and achieve great aesthetic results.

Dentists face a variety of challenges in every step of a Class II restoration procedure. From matrix system to bulk fill flowable to universal composite, Dentsply Sirona provides the only complete solution with unmatched adaptation at each critical step of a Class II restoration. See how our Class II Solution™ helps you better manage restorative performance and give your patient an improved Class II experience.²

References
2. DWR World Magazine - Q2 3. Dental Town (2012). Restorative Dentistry: Monthly Poll. What is the most challenging part of a Class II Restoration?
4. Usman et al. Sensitivity in composite restorations, Pakistan Oral & Dental Journal Vol 34, No 3 (September 2014).

70% of clinicians find contact creation to be the most challenging part of a Class II restoration.³

82% of dentists report using a flowable as a liner in Class II restorations to increase marginal adaptation.⁴

Research shows that on average, 10–15% of posterior composites result in post-operative sensitivity.⁵

74% of dentists complain about handling properties of composites such as adaptability and stickiness.⁶

When using resin-based restoratives, both isolation and accurate contact creation are essential for success. Choose a matrix system that not only provides anatomically accurate contacts, but also helps create a tight seal around the restorative field.

The Palodent® V3 matrix system is designed to create predictable, accurate contacts, a tight gingival seal, and can be configured for multiple restorations at once.

If a restorative material doesn’t take the form of the cavity prep, gaps may occur. This may lead to post-op sensitivity, microleakage or recurrent decay.

SDR® Plus can be placed in increments of bulk fill up to 4mm, and has self-leveling properties for excellent cavity adaptation, which is essential for delivering a complete seal at the most vulnerable interface.

The strongest bond is to etched enamel, but over-etching dentin is a leading cause of post-operative sensitivity. Using a universal adhesive with a selective-etch technique allows a durable enamel bond, while minimising the probability of sensitivity that can result from etching-deep dentin.

The unique chemistry of Prime&Bond universal⁷ adhesive with Active-Guard⁷ technology provides high bond strengths with virtually no post-operative sensitivity thanks to its low film thickness.

The right composite delivers an efficient, profitable procedure for the dentist and an aesthetic result for the patient. Viscosity options can help with placement ease and efficiency. An easy-to-use shading system can impact office inventory. And stain resistance to beverages, like wine and coffee, can improve patient satisfaction.

ceram.x® SphereTEC™ one composite delivers a real clinical difference in three key areas: preferred handling, simplified shading, and excellent stain resistance.

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THE NEW NiTi FILE GENERATION

**HyFlex™ CM & EDM**
Stays on track

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- Extreme resistance to fracture
- Centred canal preparation
- Regeneration by thermal treatment

**GuttaFlow® bioseal**
Double safety level

- Cost efficient root filling
- Excellent flow properties even at room temperature
- Fast working, fast curing, safe sealing (about 12-16 minutes)

**BIOACTIVE SEALING AND FILLING**

**Step 1 (direct protection)**
Protection already at filling, e.g. with bioactivity due to possible residual moisture in the root canal

**Step 2 (sleeping protection)**
Regenerative protection against possible moisture ingress, e.g. by cracks

dietmar.goldmann@coltene.com | P +41 71 757 54 40
New materials for a classic indication: characterization of all-ceramic restorations using Variolink Esthetic

By Dr Eduardo Mahn and Dr Juan Pablo Sánchez, Chile

Metal-based single crowns are normally treated using a zinc phosphate cement. Glass or ceramic materials have led to a change in the luting material being used for this indication. The comparatively low bond strength of conventional cements is also problematic. Classic preparative techniques provide only a minimal seal and a low bond formation. Variolink Esthetic is based on the etch-and-prime concept. The DC version is suitable for relatively thin restorations. This material is designed for relatively thin restorations and particularly for the anterior region and veneers. The DC version is suitable for relatively thin restorations and particularly for the anterior region and veneers.

Clinical case

A 47-year-old female patient presented to the practice with a restoration on tooth 46. The tooth had been endodontically treated and was temporized with a filling (Fig. 1). The temporary was removed, the tooth built up with Tetric N-Ceram Bulk Fill and then prepared for the crown restoration (Fig. 2). An impression was taken with a one-step two-phase impression technique using putty and light-body silicone. After scanning the model, the crown was designed in the software suite (Cerec inLab, Dentify Sirona) and milled from an IPS e.max ceramic that covers the natural dentin. To achieve a favourable result, it is essential to use a translucent luting material to achieve a favourable result.

Problem I: opacity

The opacity of the luting material is a critical issue in all-ceramic crowns as well as ceramic inlays and onlays. Almost any colour can be theoretically reproduced with ceramics by exploiting their natural translucent properties. Using an opaque luting material appears to be counterproductive in achieving this. Further critical issues are the limitations involved in the anterior region and the location of the cement line in the visible area in inlays and onlays. For instance, if a tooth is restored with a veneer, the basic shade of the tooth is maintained. Only the enamel is replaced, usually by using a translucent ceramic that covers the natural dentin. To achieve a favourable result, it is essential to use a translucent luting material to achieve a favourable result.

Problem II: adhesion

The comparatively low bond strength of conventional cements is also problematic. Classic preparative techniques provide only a minimal seal and a low bond formation. Variolink Esthetic is based on the etch-and-prime concept. The DC version is suitable for relatively thin restorations. This material is designed for relatively thin restorations and particularly for the anterior region and veneers. The DC version is suitable for relatively thin restorations and particularly for the anterior region and veneers.

Fig. 1: Preoperative situation

Fig. 2: Situation after composite build-up (Tetric N-Ceram Bulk Fill) and preparation

Fig. 3a and b: Crown design in the software suite (Cerec inLab) and try-in before crystallization firing (IPS e.max)

Fig. 3c and d: Crown design in the software suite (Cerec inLab) and try-in before crystallization firing (IPS e.max)

Fig. 4: Characterized and glazed crown

Fig. 5: Etching and silanating with Mono Bond Etch & Prime

Fig. 6: Enamel etching prior to the application of the adhesive

Fig. 7: Applying Variolink Esthetic DC into the crown

Fig. 8: Placing the crown

Fig. 9: Excess removal is easily achieved due to the new technology based on the lecithin photoinitiator

Clinical case

A 47-year-old female patient presented to the practice with a restoration on tooth 46. The tooth had been endodontically treated and was temporized with a filling (Fig. 1). The temporary was removed, the tooth built up with Tetric N-Ceram Bulk Fill and then prepared for the crown restoration (Fig. 2). An impression was taken with a one-step two-phase impression technique using putty and light-body silicone. After scanning the model, the crown was designed in the software suite (Cerec inLab, Dentify Sirona) and milled from an IPS e.max ceramic that covers the natural dentin. To achieve a favourable result, it is essential to use a translucent luting material to achieve a favourable result.

Fig. 10: Final curing. Excess luting material was removed beforehand (quarter technique)

Fig. 11: Seated crown after excess removal

One material—five shades

Variolink Esthetic is based on the Value Shade concept. The shades are classified according to the effect to be achieved with the cement. Five shades are available: Lights, Light, Neutral, Warm and Warm+. In this way, the shade spectrum ranges from an opaque white tone (Light+) to an opaque yellow brownish shade (Warm+). In between lie shades such as a coconut water white and a neutral tone (very translucent) and a warm tone (comparable to AG). In addition, the luting composite is available in a DC (dual-curing) version. The DC version is designed for relatively thin restorations such as inlays, onlays and veneers. The DC version is suitable for more extensive and opaque restorations. The luting composite is used in conjunction with the light-curing single-component Tetric N-Bond Universal.
IPS e.max® ZirCAD
The perfect combination of strength, esthetics and translucency

- Polychromatic MT Multi discs for efficiency and highly esthetic restorations
- High flexural strength and fracture toughness for a broad indication range
- Low wall thicknesses for less invasive preparations
- Three translucency levels (MO, LT, MT) for natural esthetics
The adhesive (Fetric N-Bond Universal) was applied and dispersed with a strong stream of air. The dual-cure (DC) version of the Variolink Esthetic luting composite was used for seating due to the thickness of the crown and the low translucency of the ceramic material (Fig. 7). The luting composite was applied into the crown. Then the restoration was seated (Fig. 8) and light cured from each side for two seconds. Excess composite was easy to remove due to the foveo-photoinitiator, which provides a fast and thorough cure with a minimum amount of energy (Fig. 9). For final polymerization, the restoration was light-cured from each quarter for 20 seconds (Fig. 10). Figure 11 shows the oral situation after placement of the crown. Although the cement line is located above the gingival margin, it is not visible due to the favourable tone and opacity of the luting composite. The radio-opaque build-up material and cement image of the restoration: the radiopaque build-up material and cement is not visible due to the favourable tone and opacity of the luting composite. Fig. 12 shows an X-ray control image of the restoration: the radio-opaque build-up material and cement is not visible due to the favourable tone and opacity of the luting composite. Excellent bond strength values coupled with user-friendly handling characteristics and highly esthetic properties make this material an asset in day-to-day dental restorative care.

Conclusion
The cementation methods used in conjunction with all-ceramic materials have changed for single-crown restorations. Variolink Esthetic is a protagonist of the latest generation of luting composites. Excellent bond strength values coupled with user-friendly handling characteristics and highly esthetic properties make this material an asset in day-to-day dental restorative care.

The main activities of the company today include the development and manufacturing of medical products for dentistry, providing raw materials for their development, pharmaceutical production, the production of modern disinfectants for medical institutions, developing veterinary medicine and consumer services.

Do you participate in programs with state support? What is the role of science and education in your work?
The first aid that we received from the state was a small grant from the Foundation for Assistance to Small Innovative Enterprises in Science and Technology. Since 1997, we have participated in many programs of the foundation and are very grateful to its leadership for their assistance. Participation, together with the BBU, in the federal project on government’s resolution of the RF No. 288 became an interesting experience and has led to the emergence of the first Russian certified nanocomposite, DentLight as well as the creation of two small innovative enterprises, MANOSAPATI and Keramos-BSU. We also actively cooperate with leading scientific centres, such as the Federal State Institution Central Research Institute of Dental and Maxillofacial Surgery, Dmitry Mendeleev University of Chemical Technology of Russia, Moscow State University of Medicine and Dentistry, Samara State University, I.M. Sechenov First Moscow State Medical University and Tula State Medical Academy. By 2010, the employees of VladMiVa have among them received four PhD degrees as well as a doctoral thesis.

Furthermore, at the Department of Medical and Technical Systems at BBU, the nominal audience of VladMiVa was opened and five scholar-ship awards were awarded to the best students. Our dental centre is also a clinical base for these students. We want to realise one more idea, which is to further educate our young employees.

What about your employees today? How do you solve their social problems?
Today, our companies employ a total of four to four hundred, we produce more than two hundred kinds of products. In 2004, we opened our own dental centre, which was not only a place to confirm the high quality of our materials, but also a prime example of a world-class dental centre. The holding company today also includes Trade House, our own transport company with branches across Russia. Over the past 25 years, the number of employees has grown from four to four hundred, we produce more than three hundred kinds of products and our consumers are not only in Russia, but also in more than 50 countries around the world. The main activities of the company today include the development and manufacturing of medical products for dentistry, providing raw materials for their development, pharmaceutical production, the production of modern disinfectants for medical institutions, developing veterinary medicine and consumer services.
of 400 people of different professions. Of course, like any other company, we experience a shortage of skilled employees, such as technologists, but this does not diminish the quality of our work. We value each of our employees. Even in the most difficult times of crisis, we do not delay the payment of wages. We also never refuse payments on sick leave or on paid leave. We have developed a corporate program of material assistance to employees who are in difficult socio-economic situations. All our employees also receive dental care on preferential terms. We have also built a new plant with a work environment that meets all the modern requirements of labour protection.

For 25 years, we have formed corporate traditions, such as joint holidays and excursions where the families of our employees participate and we can enjoy children’s performances and competitions. We try to create a comfortable environment for all our people. We have built a chapel, planted flowers and always aim to provide good production and living conditions. We respect our veterans. We also love our city Belgorod and participate in its development.

VladMiVa products have a high quality. Can they keep up with, or even replace, the imported goods?

In 2011, our production received a Certificate of Compliance with the requirements of International Standards (ISO13485:2003). Later, we obtained the right to label our products with the mark of European conformity (CE), which means compliance with EU standards. In 2014, JSC «VLADMIVA» became one of the first 25 enterprises that have the right to label their products as “Russian nanotechnological products”, which is a confirmation of the high quality of our products.

Out of our three hundred products, more than 90 are in demand on the foreign market. In Russia, we have to overcome the phenomenon of “Westernism” in dentistry and persuade consumers through systematic participation in exhibitions, conferences and seminars that “Made in Russia” means quality.

We are always pleased to offer to Russian dentists a large selection of dental materials, including prophylactic, restorative or treating materials, as well as materials for paediatric dentistry, biomaterials for the regeneration of bone tissue and various tools, of excellent quality, at a reasonable price.
10 questions to Prof. Paul Tipton

By Euro Dental Depot

Prof. Paul Tipton is an internationally-acclaimed prosthodontist who has worked in private practice for more than 30 years. He is the founder of one of UK’s leading private training academies and author of over 100 scientific articles for the dental press. Prof. Tipton shares his insights and career path with us in 10 questions revolving around his experiences in practicing dentistry as well as teaching all around the globe.

Euro Dental Depot: What made you decide to follow career in dentistry?

Prof. Paul Tipton: Initially, my hopes and aspirations were to be a professional cricketer. I played England Under 19s for two years and was invited on to the staff at Lancashire County Cricket Club for a year before deciding which career path I should take. My options were to do dentistry at Sheffield University or to do a general science degree at Durham University. Despite the strong emphasis on cricket at Durham, I opted for dentistry with a view to joining the Lancashire staff in the summer vacations. Eventually, when I came to choosing between cricket and dentistry, and I made a compromise and went into my dental career but also played part time for Cheshire County Cricket Club.

What do you enjoy most about your job?

The aspect I most enjoy about my job is the variety. I’m lucky I’ve got the position in dentistry where my business life comprises of clinical dentistry on the one hand which I still do one to two days per week taking referrals for complex restorative, implant and cosmetic dentistry treatment from my referral network. Most of them have been on my courses and refer to me at one of my three clinical venues: Manchester, Watford and London.

The second aspect in my job is teaching. I have been privileged to teach over 3,500 dentists since the early 90s. I also maintain a consultancy practice whereby dentist and dental companies work with me to help increase their profitability, and finally, I also do expert witness work. If I was to be asked which of these I find most enjoyable, I would probably say the teaching, as it takes me all around the world. In the last few years, I’ve taught in Australia, Singapore, South Africa, Dubai, India to name quite a few, and also set up a Dental Academy in Dubai, from which we teach all over the Middle East.

What do you consider to be the most important development in dentistry during your career?

I think there have been several very important developments, the first of which was Professor Brånemark and dental implants. My first dental implant course was in 1986, so I have been involved now for over 30 years in the implantology field. The options for treatment it now gives to patients is quite remarkable. The second big improvement has been with aesthetic and all of the newer style of bonding agents which minimize preparation required to dentistry. The third major innovation, the one which is currently much in vogue and is still being developed is that of digital dentistry, CAD/CAM. The last one, and it might surprise a few people, is the material called ‘astrindent’ from Optident which has revolutionized restorative tasking and soft tissue management in prosthodontics.

What do you consider to be the most enjoyable or the course attended since qualifying and why?

The most enjoyable or the course that has had the most profound effect on my dentistry was in 1986 when I attended a Brånemark implant course in Sweden. From there, I went on to work in the field of implantology at a time when few dentists and few patients had ever heard of dental implants.

If you had your time again, would there be any different...anything you would change in your career?

If I had my time again, I would specialize at an earlier age. I was in NHS general practice for nine years before going the Eastman and going on to become a specialist in private practice. Whilst I do not feel that those years were wasted, I could have accelerated my career pathway by spending less time in NHS general practice and gone down to the Eastman much earlier.

And finally, what is your favourite holiday destination?

At this stage, I would probably say Dubai because it is part holiday and also part business. Currently, I go to Dubai approximately six times a year. I very much enjoy the lifestyle and the sunshine that Dubai has to offer.

Editorial note: The article has been originally published on Euro Dental Depot website.

What has been the most enjoyable course you have attended since qualifying and why?

The most enjoyable or the course that has had the most profound effect on my dentistry was in 1986 when I attended a Brånemark implant course in Sweden. From there, I went on to work in the field of implantology at a time when few dentists and few patients had ever heard of dental implants.

My passion outside of dentistry has been cricket.

And finally, what is your favourite holiday destination?

At this stage, I would probably say Dubai because it is part holiday and also part business. Currently, I go to Dubai approximately six times a year for two weeks each time for teaching. I have set up the Tipton Training Academy in conjunction with CAPP, my partner in the Middle East. From Dubai, we plan to expand into most of the other Middle Eastern countries and are doing our first courses in Saudi Arabia in the new year. I very much enjoy the lifestyle and the sunshine that Dubai has to offer.
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From British Academy of Restorative Dentistry

DUBAI 2018-2020

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Prof. Goran Urde, Sweden Director Future Clinic Program Director P.G Education Dept. of Materials Sci. & Tech.

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Module 3  |  February 2019  |  Prof. Paul Tipton & Prof. James Prichard & Dr. Adam Toft & Dr. Ash Rayera
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Module 4  |  May 2019  |  Prof. Paul Tipton & Dr. Malcolm Riley & Dr. Adam Toft & Dr. Ash Rayera
Bridge Design | Aesthetic Perio Connective Tissue Grafting | Aesthetic Perio Crown Lengthening | Modern Post and Core Techniques

Diploma  |  4 Modules  |  15 Days

Module 5  |  October 2019  |  Prof. Paul Tipton & Dr James Russell & Dr. Adam Toft & Dr. Ash Rayera
Bridge Preparation Techniques | Articulator selection in Restorative Dentistry | Porcelain Inlays & Onlays | Veneer Cementation Techniques Practical

Module 6  |  November 2019  |  Prof. Paul Tipton, Prof. Goran Urde & Mr. Bill Sharpling & Dr. Adam Toft

Module 7  |  February 2020  |  Prof. Paul Tipton & Prof. Edward Lynch & Dr. Adam Toft & Dr. Ash Rayera
TMD, It's Diagnosis and Treatment | Gold and Zirconia Posterior Crown and Partial Crown Prep Techniques | Minimally Invasive Dentistry | Adhesive Bridge Preparation Techniques

Module 8  |  May 2020  |  Prof. Paul Tipton & Dr. James Russell & Dr. Adam Toft & Dr. Ash Rayera
Digital Dentistry Workflow | Orthodontics and Restorative Interface | AM: Occlusion 3 Seminar, Treatment of the Worn Dentition, Vertical Dimension and Facial Aesthetics Lectures | PM: Exams

www.bard.uk.com/dubai
Technology, innovation and passion – laser devices in the daily practice bring improvement

By Timo Krause, OEMUS MEDIA AG

MEDENCY is a dynamic and innovative dental equipment and technology company privately owned and based in Vicenza, Italy. Since its founding in 2015, Alessandro Boschi, CEO of MEDENCY, has driven the company forward through his unique passion and profound experiences in the field of laser dentistry. Prior to MEDENCY, Boschi had taken up many important leadership roles in various dental businesses over the past 15 years, forming an in-depth understanding of business as a dedicated team effort. Hence, MEDENCY presents an utterly talented team with global expertise in the field of dentistry and, in particular, dental lasers. The overall objective and ultimate mission is to provide a combination of cutting-edge products and services as well as a high-level of customer exchange, while drawing on a wide network of academic partners.

We had the opportunity to speak with Alessandro Boschi, CEO of MEDENCY, about his ideas and thoughts regarding laser dentistry, and the benefits of utilizing lasers in daily practice.

Mr Boschi, what makes MEDENCY a leading force in the field of dental lasers?

Mr Boschi: Technology, innovation and passion are the main features of MEDENCY Company. We are creating solutions to make certain lasers more widely available without compromising quality. That is our major challenge. All our products arise from the highest dedication to research and development. We are therefore setting the highest standards in manufacturing our medical devices, dental lasers, and electronic systems. We are extremely proud of the fact that our medical devices and their applications are world-wide employed by professionals and specialists in their respective field. We think, first and foremost, of others, and take a sincere interest in all points of view. Freedom of ideas is, in our understanding, an absolute prerequisite for innovation.

What are he challenges dentists face today in their daily practice?

The rapidly growing demand of high quality and professional treatment is a big and driving factor for dentists all over the world. Hence, whatever their specialty may be, they have to acknowledge those needs and demands, act on them and even foresee trends and developments. Therefore, the dental industry’s focus must be on these constant and fast developments. Dentists have to leave their comfort zone behind, learn about new technologies and techniques in order to provide patients with the best and most up-to-date solutions on the market.

The PRIMO Dental laser device is one of your key products on the market. What are the major advantages and benefits for users?

Lasers have several uses for dental surgery, periodontics, endodontics, implantology, cosmetics, and therapy. PRIMO provides a variety of applications, and is thus, a viable alternative to conventional surgical methods like electrocautery and the scalpel. Thanks to its intuitive interface and the easily accessible wide touch screen, the device is very easy to use. This small portable unit comes with variable tips and handpieces for multiple treatment procedures. Currently, new models are being finalized in the last stages of development. Among them is a new device helping implantologists to fight the new “tsunami” of dental field called Periimplantitis. Furthermore, in the near future, we are going to launch a unit specifically for hygienists as an adjunct device for scaling and root planning.

In your opinion, how have lasers changed the dental market so far, and what are your future plans?

Laser is one of the newest developments in dentistry, and has stimulated growth in the medical and dental equipment market. Particularly in dental surgery, laser offers numerous benefits, rendering treatment more effective for the dentist and less painful for the patient, accelerating treatment options and leading to significantly improved patient outcomes. I am convinced that dental lasers will be more and more utilized in dental practices. Therefore, we will continue our efforts to show, how lasers ease the practice life for dentists and their teams. Our aim is to inform dentists of all the benefits arising from using lasers in their daily routine. Furthermore, we will increase our current and full support to academy and university programs aimed to study new instruments and possible fields and indications of use.

MEDENCY Srl
Altavilla – Vicenza Italy
Tel +39 0444 271462
info@medency.com
www.medency.com
Getting with the digital times

Digital dental impressions are definitely here to stay. If you’re not already using an intraoral scanner, make sure you don’t get left behind! Carestream Dental answers your questions...

By Carestream Dental

Digital impressioning is on its way to being the next big thing in dentistry, offering a myriad of benefits to both the practice and the patient. The intraoral scanners on the market today utilise sophisticated technology to offer cutting-edge capabilities with straightforward user interactions. They facilitate a smoother and simpler workflow for the professional team and more accurate diagnostics and treatment planning. For the patient, they afford a more comfortable experience in the practice and often significantly greater patient satisfaction, which in turn boosts word-of-mouth recommendations and enhances the reputation of the practice for future growth and long-term success.

However, there are still many practices that are not yet realising the most of the advantages available to them through intraoral scanning. The perceived barriers that prevent some from taking up digital impressions can be varied, but often are not as great as you might initially think.

The key to confidence with these innovative solutions is having all the facts and knowing exactly what they can and can’t do for you and your patients. Carestream Dental understands this and is working with the profession to help provide the information and support needed to introduce intraoral scanning and all its advantages to the dental practice.

We’d like to share with you some of the questions we are most frequently asked so that we may help you to fill in the gaps.

Are they easy to use?

As with many things, they are very easy to use once you know how. Just as when trying anything for the first time, there is a learning curve when initially getting to grips with an intraoral scanner, but it is not excessive. All you need is the right training and support from a team of professionals who can help you avoid any potential pitfalls and overcome any challenges with ease. We would suggest that it takes about 15 minutes for the initial training and then the first five cases to become familiar and quite comfortable with the technology.

Will it save me time?

Consider polymer imprints materials with an average working/set time of six minutes. With the CS 3600 intraoral scanner, upper, lower, and occlusal scans can be completed in the same time – so yes, the scanners will save you time as well. Further to this, Carestream Dental offers solutions to make your life even easier, allowing your scans to be sent to your laboratory in about two to three minutes. This provides an opportunity to engage with the technician in real-time, confirming that they have all the information they need to proceed with fabrication of the required restoration or appliance, while the patient is still in the chair.

Is an intraoral scanner as accurate as a traditional impression?

Absolutely. There are various studies to show that digital impressions are more accurate than traditional alternatives. What’s more, with several intraoral scanners available on the modern market, there has been research into which products are the most accurate, with the CS 3500 coming out on top for trueness and precision in a study conducted by Mangano et al. The CS 3500 is the latest model built upon the successes of the CS 3300, so you can have complete confidence in the accuracy of your scans.

Can I try before I buy?

Of course. You need to make sure that intraoral scanning is right for you and, if you have chosen the right product for you. Our sales team will carry intraoral scanners for demonstrations, so get in touch if you’d like to try one for yourself.

Is it compatible with short-term orthodontic appliances?

Another benefit of our scanners is that our software is totally compatible with OrthoTrac for a seamless workflow – other scanners require the purchase of additional programs in order to interact with the system, which increases costs and hassle. Further still, the CS 3500 and CS 3600 are both compatible with ArchformByte – the company behind C-Thru Clear Aligners. To find out more about these orthodontic systems our scanners can work with, just give us a call.

Is it worth the investment?

As with any new technology, an initial investment is required to purchase and set up an intraoral scanner but this can be undertaken via lease finance to help spread the cost. As to whether it’s worth it in the long-run, consider a return on investment calculation. For example, an orthodontic practice might be taking ten sets of study models per day at £10 per set, and it decides to purchase an intraoral scanner on finance over five years. The lab bills for one week of gypsum study models will pay for the monthly repayments of the scanner. So the other three weeks are pure profit. Not to mention the physical space saved through not having to store all those gypsum models!

Which labs can I work with?

If the intraoral scanner produces open STL or IGES files, then you can continue working with your current lab without any problems at all as long as they have ‘open’ CAD systems. With the CS 3500 and CS 3600, you can simply send the open files to your chosen lab, who can view and manipulate the images using their CAD software without ever needing to purchase new software or upgrade their existing systems. We’re all about making life easy for everyone involved!

How do I find the right intraoral scanner for me?

Again, as with any purchase for work or leisure, it’s necessary to do your research and make sure you know exactly what is and is not available. Try the different scanners for yourself where you can, speak to other practices that use them and find out what they think. Find out as much as you can about the support that will be available to you once you purchase a product and any ongoing fees as well – there will nearly always be some form of hiccup, but knowing you have the support to get you through quickly and easily is essential.

References


For more information please contact

Carestream Dental
Web: www.carestreamdental.com

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References


For more information please contact

Carestream Dental
Web: www.carestreamdental.com
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Programme outline: implant design, radiographic techniques, implant surgery, implant specific treatment planning. Basic practice management.

Module 3 | 26–29 July 2018 (4 days) | Restorative Aspects of Implantology
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Programme outline: tooth now concept, immediate and early loading concepts from single tooth to fully edentulous patients, severely resorbed jaws, sinus lift and ridge splitting techniques, hands-on training and live patient surgical treatment.

Module 5 | 06-09 December 2018 (4 days) | Medical Compromised Patient and Soft and Hard Tissue Management
Programme outline: medications related osteonecrosis, GBR techniques, soft tissue management, implant aesthetics, ceramics and implants.

Module 6 | 28-31 March 2019 (4 days) | Rare Complications and Techniques
Programme outline: rare complications, combination implants and teeth, live patient treatment, written and oral examination and case presentations.

www.bard.uk.com/implantdubai
A breath of fresh air: Dental Tribune International launches new website

By DTI

LEIPZIG, Germany: On 15 December, Dental Tribune International is launching its brand new website. The changes reflect current visual trends, create more space for new content and simplify user navigation. As an international online platform, www.dental-tribune.com will be the only website that offers a combination of dentistry-related news, clinical articles, research papers, product and industry information, job offers and continuing education opportunities in around 25 languages.

In addition to its successful print publications, Dental Tribune aims to deliver the newest dental content to its readers online. The latest science, event and business news are released every day. Furthermore, dental professionals from all over the world publish their clinical articles on the website, covering the most recent developments in fields such as implantology, endodontics, orthodontics, cosmetic dentistry, dental hygiene and practice management. The majority of articles will be complemented with photo galleries or video clips, giving even more room to visual content than before.

On the new website, members of the dental industry will still have the opportunity to present their business and portfolio under a company profile. The new design will allow an appealing composition of company background, news, videos, events and webinars, information on its latest products, current job offers and company-related e-papers. Clients will also have the opportunity to promote their products and events on digital banners on the website and in newsletters. Both of these advertising options have been redesigned as well. Additional to established formats, banners will now be offered in new sizes, and newsletters will have a fresh look that engages readers.

The new website will give readers information about in-house and the latest dental events, such as congresses, trade shows and workshops, all over the world. It will allow users to search for country-specific job offers and classified advertisements, as well as profiles of local and international opinion leaders who have published articles through Dental Tribune. All print issues that are published within the international Dental Tribune network will be made available as PDF files and e-papers in the website’s archive section.

Users interested in further professional development will find a broad range of learning opportunities on the website for earning continuing education credits. The Dental Tribune website is linked with Tribune CME, an education program presented by experts at dental training facilities worldwide with the aim of providing comprehensive hands-on training in advanced dentistry. Via its Dental Tribune Study Club platform, Dental Tribune also offers a number of webinars on all topics of dentistry. Dental professionals can participate in these online continuing education courses on any web-enabled device from anywhere in the world. Information on upcoming educational events will be announced on the new website.

Owing to the international audience of the Dental Tribune network and the contributions by dental publishers and dental professionals worldwide, content will always be made available in several languages. When visiting www.dental-tribune.com, users will initially be guided to their local page, but easily be able to view articles, product information or webinars in English on the international website.

Users can also read in Chinese, Dutch, German, Italian, Japanese, Spanish and many other languages.

Headquartered in Leipzig, Dental Tribune International has been involved in dental publishing since 2003. Today, the group is composed of the world’s leading dental publishers. Its portfolio currently includes more than 350 print publications and multiple websites that reach more than 650,000 dentists in more than 90 countries and 25 languages. DTI also offers communication services and organizes continuing education programs, as well as congresses and exhibitions. As official media partner of the FDI World Dental Federation and regional dental organizations, DTI is able to promote and help expand a truly global dental network.
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Dentsply Sirona at AEEDC 2018

By Dentsply Sirona

The 22nd edition of the UAE International Dental Conference & Arab Dental Exhibition – AEEDC Dubai 2018 will take place at the state-of-the-art Dubai International Convention & Exhibition Centre (DICEC) from the 6th to the 8th February 2018.

Dentsply Sirona would like to welcome you to our stand in Hall 8 at 8C01-8D01. By combining leading consumable product brands with equipment, technology and specialty products, Dentsply Sirona partners with dental professionals and labs to advance patient care and fundamentally improve oral health worldwide.

As The Dental Solutions Company™, Dentsply Sirona provides high-quality solutions that support the needs of dental professionals around the globe. We are committed to innovation, improving clinical outcomes and patient experience.

We are excited to showcase our latest products to you at the upcoming UAE International Dental Conference & Arab Dental Exhibition in Dubai. With the largest research and development platform in the industry, Dentsply Sirona is committed to its mission of empowering dental professionals to provide better, safer, faster dental care.

Here is a sneak peak of what to expect:

**Single Visit Dentistry with CEREC & Celtra® Duo**

Single visit dentistry is an emerging expectation amongst patients today. Everything from a single source for better, safer and faster dentistry, and this is made possible by CEREC. No other material block offers CEREC users the level of workflow freedom and flexible processing options as Celtra® Duo (218). In combination with Primeshell® universal™ adhesive and Calibra® Ceram Cement it is easy to achieve excellent results. These products were designed to enhance and strengthen the individual benefits each of them provides, resulting in an easy-to-use system that streamlines the restoration process.

**Class II Solution™**

Dentists face a variety of challenges in every step of a Class II procedure and as Class II restorations account for nearly half of all direct restorations, getting them right the first time is key to happy patients and profitability. Dentsply Sirona’s Class II Solution™ offers a portfolio of products designed to work together to help you better manage restorative performance and give your patients an improved Class II experience. From matrix system to bulk fill flowable to universal composites, the Dentsply Sirona Class II Solution™ is the only complete solution with unmatched adaptation at each critical step of a Class II restoration.

**WaveOne® Gold Solution**

The WaveOne® Gold family provides a comprehensive treatment solution to promote confidence and predictable outcomes. WaveOne® Gold delivers to the endodontic procedure a metallurgically advanced single-file technique for shaping canals - all within a recapitulating motion. You can easily plan your endodontic treatment with the new 3D Endo™ Software. Thanks to the intuitive user interface and views optimized for Endodontics, you can create a 3D map of the canal network and see what you used to feel within a minute. The X-Smart IQ™ will then support you through every step of your endodontic treatment – from patient education to treatment data.

**The Celtra® family**

Celtra® Press is the new class of zirconia-reinforced lithium silicate material available to labs for pressable restorations to blend into the natural dentition for a broad range of indications and together they provide a solution for a broad range of indications and user-friendly applications. Dentsply Sirona’s digital materials are optimized to work within all Dentsply Sirona scanning machines, milling machines, and furnaces. Zirconia is the strongest all-ceramic dental restoration material on the market. The high-performance zirconia materials, Cercon® xt and Cercon® ht are available for almost all CAD/CAM systems as fillers and cementation disks for sophisticated restorations.

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Study finds link between obesity, gender and periodontal health

MADRID, Spain/PORTO ALEGRE, Brazil: Although researchers have previously investigated and analysed the relationship between periodontitis and obesity, little attention has been paid to the role an individual’s biological gender may play in this regard. A recently published, five-year study of individuals in Porto Alegre, Brazil, has rectified this oversight and has discovered that obese females are far more likely to suffer from the progression of periodontal attachment loss (PAL) than obese males.

The study’s research team interviewed 582 individuals who had been interviewed and clinically examined five years prior and met their inclusion criteria. These individuals were weighed and their Body Mass Index was calculated according to the World Health Organization’s criteria, with 19 per cent of the sample being categorised as obese.

The researchers discovered that obese individuals were more likely to experience the progression of periodontal disease than those of normal weight. However, their findings also demonstrated that obese females had a 64 per cent increased risk for PAL progression, whereas there was no observed increase in this risk for obese males.

“Obesity and periodontal disease are important public health problems,” explained Dr Eduardo José Gaio, the lead author of the study. “Periodontitis affects more than 50 per cent of adults worldwide and the prevalence of overweight and obesity in individuals is approximately 60 per cent. This is one of the few longitudinal studies assessing the effect of obesity on periodontal health and the first one to investigate the possibility that sex may modify this relationship.”

Gaio’s study is one of the finalists for the inaugural Perio Link Award, a competition organised by the SUNSTAR Foundation. Adjudicated by a committee of dental experts, the competition is designed to raise public awareness of the important research that is being conducted on the link between oral and systemic health. The winner of the Perio Link Award will win a trip to EuroPerio9, a congress hosted by the European Federation of Periodontology in Amsterdam, from 20 to 23 June 2018. The winner will be formally recognised at an awards ceremony at the event and will receive a monetary prize of €1,000.

The study, titled “Effect of obesity on periodontal attachment loss progression: a five-year population-based prospective study”, was published online in March 2017 in the Journal of Clinical Periodontology Digest and is available for viewing here.

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Dry mouth in older adults may be drug-induced

Older adults are high users of medications, with about 40 per cent of community-dwelling and 75 per cent of institutionalised adults taking five or more medications (Photograph: Shutterstock/By FuzzBones)

By DTI

MELBOURNE, Australia/Stockholm, Sweden: For older adults, salivary gland hypofunction can be a common side-effect of prescribed medications. The condition can lead to dental caries, dysgeusia, oral mucosal soreness, and oral candidiasis, among others. In a systematic review and meta-analysis, researchers have sought to learn more about the connection between medications and dry mouth in older adults. They found that medication use was significantly associated with xerostomia and salivary gland hypofunction in older adults.

So far, only few studies have investigated the severity of medication-induced dry mouth and the associated sequelae. Postdoctoral research fellow Dr Edwin Tan of Monash University in Australia worked closely with researchers from Karlstad University and the Academic Center for Geriatric Dentistry, both in Sweden, to screen titles and abstracts of a total of 1,544 studies investigating medication use as an exposure and xerostomia or salivary gland hypofunction as adverse drug outcomes. In the end, 52 were deemed eligible for inclusion in the final review and 26 in the meta-analysis.

In the intervention studies included, urological medications, anti-depressants and psycholeptics were significantly associated with dry mouth in adults over the age of 60. In the observational studies, numbers of medications and several medication classes were significantly associated with xerostomia and salivary gland hypofunction. Medications used to treat urinary incontinence were nearly six times more likely to cause dry mouth than a placebo.

The scientists recommended that future research develop a risk score for medication-induced xerostomia to assist with prescribing and medication management. They also suggested that health care providers should regularly monitor all medications to identify potential side-effects and to adjust doses or change medications when necessary.

The study, titled “Medications that cause dry mouth as an adverse effect in older people: A systematic review and metaanalysis”, was published online ahead of print on 26 October 2017 in the Journal of the American Geriatrics Society.
Biofilm research could help advance dentistry

By DTI

MUNICH, Germany: According to experts, biofilms are generally regarded as a problem to be eradicated due to the threats they pose to humans and materials. However, new research out of Germany suggests that communities of algae, fungi or bacteria possess interesting properties from both a scientific and technical perspective. These properties could result in the improved creation of structural templates, including materials for teeth.

All natural materials (whether wood, bone, mother of pearl or teeth) have been optimised by evolution over millions of years, based on the principle of adapted stability with the lowest possible weight where nature provides the blueprints for many technical developments. However, reverse-engineering replicas cannot reproduce the structural complexity of the original material in nature.

“In nature, we find many materials with properties that artificial materials are unable to replicate in the exact same fashion,” said Prof. Cordt Zollfrank, who, together with his team, researches basic scientific principles for the development of new materials at the Chair of Biogenic Polymers at the TUM Campus Straubing for Biotechnology and Sustainability.

Zollfrank and his team of researchers have now presented a series of procedures in biology that use light, heat, specially-prepared substrates and other stimuli to guide the direction of the movement of microorganisms along very specific paths. “These biological findings for controlling microbes via targeted stimuli will shape the future of material research,” said Zollfrank. According to the paper, the findings make it possible to create tailor-made templates for new materials with natural structures from the microbes themselves, or their secretions. “With our article, we want to show the direction this journey will take us in the field of biologically inspired material science,” Zollfrank continued.

Following on from the paper, and as part of a Reinhart Koselleck project of the German Research Foundation (DFG), scientists are already using the technology to a certain point. Taking advantage of the special properties of red algae, which secrete chains from sugar molecules and whose direction of movement depends on exposure to light, scientists are projecting light patterns that change into the growing medium of the algae over time—using them to create long, fine polymer threads that serve as customised templates for the manufacturing of functional ceramics.

The paper, titled “A perspective on bio-mediated material structuring,” was published on 27 November in the Advanced Materials journal.

New research suggests that algae, fungi and bacteria possess interesting properties, from both a scientific and technical perspective, which could help improve the creation of structural templates and the development of dental materials (Photoraph: Shutterstock/By sangriana)

The paper, titled “A perspective on bio-mediated material structuring,” was published on 27 November in the Advanced Materials journal.

New research suggests that algae, fungi and bacteria possess interesting properties, from both a scientific and technical perspective, which could help improve the creation of structural templates and the development of dental materials (Photoraph: Shutterstock/By sangriana)
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- Remarkable abrasion resistance specially on opposing dentition  
- High elasticity suitable for posterior restorations  
- Excellent fl exural & compressive strength  
- Long-term color stability  
- Ideal viscosity with optimal handling characteristics  
- Easy to sculpt, non-sticky & easy to separate from spatula  
- Remarkable abrasion resistance specially on opposing dentition  
- High elasticity suitable for posterior restorations  
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- Easy to apply, versatile, low fusing stains facilitate individualized aesthetics  
- Remarkable mechanical properties with outstanding durability  
- Exceptional shade stability & impeccable color match  
- Optimal precision for consistent results and fit  
- Easy & quick dividing with minimal reaction layer of press ceramic restorations invested with Ceravety Press & Cast Multipurpose investment

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- A fast, easy, comfortable, affordable solution to improve your smile  
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- Ergonomic frame for an optimal weight distribution  
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- BluTab is specially formulated to be continuously present in your water lines and to keep lines clean  
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New Sensodyne Rapid Action

ACTS FAST
to help prevent moments like these
FKG Dentaire presents its new single file sequence

By FKG

A new generation of Swiss-made instruments enables safer and more effective root canal treatments, thanks to unique 3D extension capabilities.

The XP-end® Shaper Plus sequence, launched by leading Swiss endodontic firm FKG Dentaire SA, solves a common problem for dentists: how to treat complex root canal systems without causing damage to the dentinal structure. FKG combined unique Adaptive Core™ technology with 3D design to create instruments that can easily adapt to the canal anatomy to clean once impossible-to-reach areas. The result is enhanced debris removal and irrigation for a more gentle, conservative treatment compared to instrumentation using traditional NiTi files.

“The main problem with conventional files is their lack of flexibility, which means that dentists can’t remove all the debris, but sometimes end up taking off too much healthy dentin,” says Thierry Rouiller, CEO of FKG Dentaire.

“But that all changes with this XP-end® generation of instruments.”

The patented MaxWire® alloy reacts to the body’s temperature, making the tools highly flexible compared to instruments of the same final size. A small, free-floating adaptive core designed in 3D allows the instruments to expand and progress with agility along the canal while resisting to cyclic fatigue.

• The XP-end® Shaper (XP-S) performs 3D debridement of the canal while respecting its natural shape.
• The XP-end® Finisher (XP-F) achieves 3D cleaning and biofilm removal, including in areas impossible to reach with traditional files.
• The instruments are delivered in a sterile blister pack destined for single patient use, thus maximising safety. With the XP-end® Shaper Plus sequence, dentists have the most advanced Swiss precision tools at their fingertips to perform a complete, minimally invasive root canal instrumentation.

References FKG

XP-end® Shaper Plus sequence, 25 mm (K-File 10 + K-File 15 + XP-S + XP-F): S1.XB0.00.SAC.FK

FKG Dentaire SA
www.fkg.ch
Drilling treatment using the new MTA Repair HP
Clinical Case Report

By Prof. Dr. Fábio Duarte da Costa Aznar, Brazil

Female patient, 47 years old, presented with a clinical picture of extensive periapical perforation of the furcation region of the dental element 36 (Figs. 1 and 2), associated with radiographic bone loss, ventricular fistula and pain on palpation. The patient reported history of having been previously subjected to an urgent intervention in this tooth by other professionals, as it presented acute pain characteristic of pulpitis.

The tooth was submitted to endodontic therapy, and after the initial approach with the patient, anesthesia was given, followed by preparing absolute isolation. Subsequently, the coronal access was performed, where it was possible to clinically verify the presence of pulp necrosis and perforation. A disarticulating detachment of root canals (crown-down) was performed using an irrigator agent NaOCl 2.5% as irrigant (VDW/Germany), and as irrigator the Reciproc system foraminal locator. The preparation of drying the area. The filling of the drilled region was carried out with GutaCondensor (Maillefer/Switzerland) and it was inserted using an MTA Applicator (Angelus/Brazil). Clinical and radiographic criteria were used to determine the correct filling using the material (Figs. 4 and 5), and the glass ionomer cement (Vitrebond/WMA/USA) used for the protection of the sealed region (Fig. 6). After the temporary restoration, radiographically it was observed proper sealing of furcation region by MTA Repair HP, as well as no postoperative complications.

Follow up was conducted after 2 months, observing bone neoformation in the furcation region and absence of symptoms (Fig. 7).

Irrigating the root canal
A Case Report

By Dr Vittorio Franco, UK and Italy

The patient reported on in this article is a student in dentistry and his parents are both dentists. They referred their son to a good endodontist who then referred the case to me. As always, peers are more than welcome in either of my practices, in Rome and London, so when I treated this case, I had three dentists watching me, a future dentist on the chair, placing a great deal of pressure on me.

The 22-year-old male patient had a history of trauma to his maxillary incisors and arrived at my practice with symptoms related to tooth #21. The tooth, opened in an emergency by the patient’s mother, was tender when prodded, with a moderate level of sensitivity on the respective buccal gingiva. Sensitivity tests were negative for the other central incisor (tooth #31) was positive), and a periapical radiograph showed radiolucency in the periodontal areas of both of these teeth. The apices of these teeth were quite wide and the length of teeth appeared to be consistent with the periodontal aspects. The patient had previously undergone root canal treatment, and it was noted that the tooth exhibited a clinical picture of extensive periapical irritation.

The patient reported on in this article was referred to me due to a history of trauma to his maxillary incisors and arrived at my practice with symptoms related to tooth #21. The tooth, opened in an emergency by the patient’s mother, was tender when prodded, with a moderate level of sensitivity on the respective buccal gingiva. Sensitivity tests were negative for the other central incisor (tooth #31) was positive), and a periapical radiograph showed radiolucency in the periodontal areas of both of these teeth. The apices of these teeth were quite wide and the length of teeth appeared to be consistent with the periodontal aspects. The patient had previously undergone root canal treatment, and it was noted that the tooth exhibited a clinical picture of extensive periapical irritation.

Fig. 1-2: Initial clinical and radiographic appearance of teeth 36

Fig. 3: Obturation of root canals.

Fig. 4-5: Clinical and radiographic appearance of drilling filling with MTA Repair HP

Fig. 6: Drilling region protection sealed with glass ionomer cement.

Fig. 7: Follow-up X-ray after two months.
I suctioned the sodium hypochlorite, checked the working length with a paper point and then obturated the canal with a 30° 33 mm in thickness plug of bioactive cement. I then took a radiograph before obturating the rest of the canal with warm gutta-percha. I used a compomer as a temporary filling material.

The symptoms resolved, so I conducted the second treatment only after some months, when the tooth #11 became tender. Tooth #11 had healed.

I performed the same procedure and obtained the same outcome (the four-month follow-up radiograph showed healing).

Dr Vittorio Franco
He is an endodontist who runs an endodontic referrals practice in London and in Rome. An active member of the European Society of Endodontology, Franco is also the President-elect of the Italian Society of Endodontology.

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Interview with Werner Gotsch about Celtra® Press, the new zirconia-reinforced lithium silicate ceramic by Dentsply Sirona

Familiar and yet completely different

By Dentsply Sirona

Every day, Master Dental Technician Werner Gotsch faces the question of what materials can help him keep his laboratory in Marktleuthen, Bavaria – healthy and economically viable. Moreover, his customers, who include dentists from all over the country, expect more of him than just “standard quality.” What they do expect is individual, aesthetic, precise fitting restorations made from materials whose quality is beyond reproach. Werner Gotsch had the opportunity to accompany the development of the new zirconia-reinforced lithium silicate ceramic, Celtra® Press. In this interview, he tells us what sets this material apart.

Mr. Gotsch, what prompted you to get personally involved in the development of the Celtra® Press pressable ceramic material?

Gotsch: To answer this question I have to back up a bit, because there is a fundamental issue we need to clarify first. I am talking about the general role of pressable ceramics. To me, these materials have the greatest potential – along with zirconia – when it comes to creating highly aesthetic and durable restorations. Their process-related variability and aesthetic properties have now made pressable ceramics indispensable in the dental laboratory. However, despite all the advantages of the material and the associated procedures, all systems on the market also have certain shortcomings. So when Dentsply Sirona approached me with a request to get involved in the development of a new system that does not have the known disadvantages of existing systems, I agreed immediately.

It is probably not really that fair to talk about the disadvantages of other products. Let us talk about the outstanding characteristics of Celtra® Press instead. What are those, specifically?

I want to make one thing clear: there are very good pressable-ceramic systems on the market. But if something is already good, that does not at all mean it cannot be improved further. I myself am not a materials scientist. I can only describe my impressions, which I collected in an intensive testing phase and communicated to the company. In simple terms, one could say that the main advantages are precision of fit and aesthetics. Celtra® Press forms no reaction layer on its surface, that is, at the interface with the investment material. This means that your divested structures are the same as the one you invested. This is impressive and of course has pronounced opalescence, which ensures that the shade of the adjacent teeth is “taken over” – downright absorbed, if you want to put it that way. This results in extremely high-quality aesthetic results – without time-consuming reworks.

Are there any other aspects that you would like to highlight?

Let me remind you that I am not a materials scientist. But in a close cooperation with a research and development department you do end up learning one thing or another. For example, there is the high strength of Celtra® Press that results from the fact that the lithium silicate is reinforced with zirconia. This ensures a strength of more than 100 MPa. And this is why it is possible to produce bridges up to the second premolar with this material. The material is very stable at the edges, and the marginal accuracy is very high. Moreover, I have never before encountered a pressing material that flows as well as Celtra® Press does – which makes it possible to press even larger objects with only one sprue. So here is another one of those points that provide real added value to my laboratory, saving me time in trimming, separating and finishing.

In all, Dentsply Sirona has succeeded in introducing a new pressable ceramic system that combines excellent processing characteristics with high strength and great aesthetics. This reduces my lab time, I get a broader range of indications, and the optical properties facilitate restorations whose appearance is no way inferior to the natural teeth.

Another advantage that I see is that the IPS e.max® muffle system can be used for Celtra® Press and that the material can be processed using all commercially available pressing furnaces. Therefore, no additional capital investment is required in the laboratory.

That sounds very enthusiastic. How would you describe successful dental technology today?

I would cite a phrase I often use at the end of my lectures or one of my workshops, a phrase that is more relevant today than ever: “Successful dental technicians are characterised by their passion for perfect restorations – and by their business acumen.”

Perfect walls

By COLTENE

In matters of aesthetics, dental techni-
cian David Zweifel would be a dif-
ficult man to surprise in a hurry. In
this interview, the experienced labo-
ry manager and material spe-
cialist from St. Gallen explains how
extremely thin walls can be created
without difficulty and why CAD/ CAM
composite blocks are already proving
to be the new magic bullet in everyday
work.

Originally, the passionate expert on
aesthetics wanted to become a
goldsmith. Now he is busy creat-
ing “oral jewellery”: David Zweifel
of the 80s and 90s. If you like, we
claim to be the ultimate solution.

In such cases, considerable pow-
er of persuasion are required to show
people what true CAD/CAM com-
posite blocs can achieve these days.
Bonding is the same as for any other
filling. If I want to create a proper
monolayer, then I must always attach
a crown, an adhesively with a bonding
system that fits the tooth substance,
core build-up or abutment respec-
tively; then I will end up with a good,
long-lasting solution.

How do you convince customers who are resistant to advice of the benefits of the
new restoration methods?

Those concerned need to experi-
ence the high quality themselves,
then they quickly become aware of
the high-quality solutions I can of-
fer. Recently, a patient who was very
particular about shade and shaping,
the high-quality solutions I can of-
fer. Those concerned need to experi-
ce the high quality themselves,
then they quickly become aware of
the high-quality solutions I can of-
fer. Recently, a patient who was very

How much time do you save
when processing real CAD/ CAM
composite blocks?

I would say, actually 50 to 70 % faster
than before. The entire firing pro-
cess is eliminated and polishing is
unbelievably quick. As the name
implies, BRILLIANT Crios blocks have
an intrinsic: fine satin gloss, e.g. they
require little in terms of process-
ing. As a rule, I would recommend a
two-step approach to beginners: first
coarse grinding and then two
special fine grinders.

Using the “One Step” grinding
mode of my CEREC MC XI, the
crowns turn out even more beautiful
than with the fast mode.

Doesn’t increasing digitisation
and the permanent use of CAD/CAM in everyday lab
routines rob dental

China to a patient who was com-
ing the lengthy fine tuning process, I
myself must have ground hundreds
of units. What impressed me most of
all: the walls of the fabricated pieces
were perfectly stable every time!
If you take a holcror look at the
margin accuracy, you can see that
even tapered restoration margins
of only 0.1 mm thickness can be ground
perfectly without becoming ctag-
ged. Filing or even cracks are truly
a thing of the past. There is hardly
a material which offers so much op-
portunity for accurate work, a verti-
calg delightful for the Swiss soul.

Why is it that many dentists
are still wary of CAD/CAM
composite blocs?

Well, many dentists are not fully

afford to be blind with regard to the
new media. 3D printing may not be
fully mastered yet, but such methods
will continue to dictate and facilita-
our work.

When I saw the first CAD/CAM devic-
es the 1975 years ago, I wanted to be
part of their development right from
the beginning. At the time I said to
my wife that the amortisation costs
would certainly not stop me or, in
the words of the Swiss Railways: “I
am boarding the train now and I am
going to wait until it arrives in
Geneva.” Reservations about the ini-
tial outfit proved entirely unjusti-
fied in retrospect. I had already easily
surpassed the break-even point after
only half the calculated time.

In other words:
Modernisation pays off...
Absolutely! It never hurts to expand
one’s service portfolio! Unfortunate-
ly, these days people nowadays
look at the price first. The daily battle
against the “Deep Food” mental-
ity also affects us in the laboratories,
but one should not be much more
economical with respect to dental

mounting. And if I can mill two
crowns from a 15 cm long CAD/CAM
composite block instead of one, then
the material costs are completely

And last but not least, how
do you view the future of
dental laboratories?

If you project the present advances in
materials research into the future,
then dental materials will become
even more accurate and reliable
who, you probably will we end growing bio-

regenerative materials in our own
laboratories. The dental technician
as craftsman and artist will definitively
not be redundant!

I also have an abundance of ideas for
other product innovations among
other things, I personally would find
tricoloured CAD/CAM composite
blocks a highly attractive proposition
for the future, where I could always
be aware of what one is comparing.
For example, I recently had to make
an affordable proposal for a patient
on social benefits. He did not wear
dentures and refused a gold-zirconi-
unbridge for cost reasons. Finally, I
ground a titanium framework and
veneer it with composite blocs.

After grinding the crowns and bond-
ing everything, the appearance was
sensational - neatly like real ceramic,
but in contrast, the dentures were
reimbursed without any problems
by the health insurer. A “high qual-
ity long-term temporary restora-
tion” position enamel, dentine and
veneer a result that is far more aesthetic

to advice, and digitisation in modern
prosthetics.

Mr Zweifel, what must the
perfect dental material
deliver in your opinion?

D. Zweifel: The best dental ma-

terial is still the natural tooth, wouldn’t
you say? Ideally, a state-of-the-art
material would offer properties as
close to dentine as possible; both in
terms of abrasion resistance as well
gloss retention and durabil-
ity. At the same, the restoration should
provide a harmonious match to the
patient’s teeth and be gentle on the
opposing tooth. What good is a sta-
ble connection if the problem is only
then are still very aware of the prog-
ress composed of this versatile
material from classical filling ther-
apy. Nowadays, final inlays, onlays,
fully anatomical crowns and veneers
can be fabricated quickly and easily
from composite using the classical
CEREC manufacturing process. The
substances and properties of these
blocks are fast becoming an all-purpose an-
swer in everyday lab routines.

During grinding, a modern compos-
tve material is far better material
than ceramic and is easier to shape.

Subsequent corrections in shade or
card can be realised easily by the
clinician in his/her own practice,
which obviously also meets the needs
dentist. Overall, the accuracy of fit of
crowns is extremely high and the flexible material fits
more harmoniously into the row of teeth than brittle ceramic:

How about sculptability?

Which margin thicknesses are
possible with state-of-
the-art composites?

For example, I was able to play the
role of “midwife” for the innova-
tive BRILLIANT Crios substax hybrid
cosmetic material of Swiss dental
specialist COLTENE and was closely
involved in its development. Dur-
ing the lengthy fine tuning process, I
myself must have ground hundreds
of units. What impressed me most of
all: the walls of the fabricated pieces
were perfectly stable every time!
If you take a holcror look at the
margin accuracy, you can see that
even tapered restoration margins
of only 0.1 mm thickness can be ground
perfectly without becoming ctag-
ged. Filing or even cracks are truly
a thing of the past. There is hardly
a material which offers so much op-
portunity for accurate work, a verti-
calg delightful for the Swiss soul.

Why is it that many dentists
are still wary of CAD/CAM
composite blocs?

Well, many dentists are not fully

afford to be blind with regard to the
new media. 3D printing may not be
fully mastered yet, but such methods
will continue to dictate and facilita-
our work.

When I saw the first CAD/CAM devic-
es the 1975 years ago, I wanted to be
part of their development right from
the beginning. At the time I said to
my wife that the amortisation costs
would certainly not stop me or, in
the words of the Swiss Railways: “I
am boarding the train now and I am
going to wait until it arrives in
Geneva.” Reservations about the ini-
tial outfit proved entirely unjusti-
fied in retrospect. I had already easily
surpassed the break-even point after
only half the calculated time.

In other words:
Modernisation pays off...
Absolutely! It never hurts to expand
one’s service portfolio! Unfortunate-
ly, these days people nowadays
look at the price first. The daily battle
against the “Deep Food” mental-
ity also affects us in the laboratories,
but one should not be much more
economical with respect to dental

mounting. And if I can mill two
crowns from a 15 cm long CAD/CAM
composite block instead of one, then
the material costs are completely

And last but not least, how
do you view the future of
dental laboratories?

If you project the present advances in
materials research into the future,
then dental materials will become
even more accurate and reliable
with regard to the special proper-
ties of human teeth. Meanwhile, the
high performance composites keep
offering better quality and more
attractive shades, but who knows,
we probably will we end growing bio-
regenerative materials in our own
laboratories. The dental technician
as craftsman and artist will definitively
not be redundant!

I also have an abundance of ideas for
other product innovations among
other things, I personally would find
tricoloured CAD/CAM composite
blocks a highly attractive proposition
for the future, where I could always
be aware of what one is comparing.
For example, I recently had to make
an affordable proposal for a patient
on social benefits. He did not wear
dentures and refused a gold-zirconi-
unbridge for cost reasons. Finally, I
ground a titanium framework and
veneer it with composite blocs.

After grinding the crowns and bond-
ing everything, the appearance was
sensational - neatly like real ceramic,
but in contrast, the dentures were
reimbursed without any problems
by the health insurer. A “high qual-
ity long-term temporary restora-
tion” position enamel, dentine and
veneer a result that is far more aesthetic

Emirates Dental Hygienist Club welcomes over 40 dental hygienists during inaugural event at CAPP Training Institute

By Emirates Dental Hygienist’s Club

The Emirates Dental Hygienist’s Club (EDHC) held their inaugural Annual Symposium on Friday 19th January at Centre for Advanced Professional Practices (CAPPmea) CAPP Training Institute facilities in Dubai, UAE. President Rachael England welcomed over 40 dental hygienists from throughout the region and began proceedings with a lecture on the role of the EDHC to empower clinicians, improve health literacy in the region, develop interdisciplinary collaboration and the need for public and private sector partnership.

Discussion included public health in a dental context, presented by Rachael England, providing an uplifting speech about the role of the Dental Hygienist within public health followed by opportunities and challenges to improving dental health in the UAE region. Continuing the public health theme, Dr. Shiamaa Shihab Al Mashhadani of the Dubai Health Authority presented her inspiring work on the “My Smiles” initiative, demonstrating the effectiveness of early life intervention and oral health education for 4-6-year olds. The initiative is fully covered by Dental Tribune MEA in the January-February 2018 publication.

Mary Rose Pincelli Boglione of the International Federation of Dental Hygienists (IFDH) was delighted to join the club for the day and provided an insightful presentation based on “When is the best time to brush?”.

Next up was an interactive session held by Beverley Watson updating the attendees with the latest techniques in guided biofilm removal, followed by further discussion about management of biofilm using oral probiotics by EDHC treasurer Joanne Flower.

The EDHC welcomed Dr. Hamzeh Awad, Associate Professor in Health Sciences and Health Information Technology Abu Dhabi University, supported by EDHC Vice-President Hanan Abdallah, to present the innovation of teledentistry and diabetes management and questioned the attendees how they would embrace this technology to support their own patients, providing the opportunity for future collaboration.

Dr. Eleftherios Kaklamanos, Associate Professor in Orthodontics, closed proceedings with a dedication to team work between Orthodontists and Dental Hygienists, reinforcing the essential role Hygienists play in preparing and maintaining patients throughout treatment.

President Rachael England commented “Ongoing events are planned throughout the year to continue providing educational opportunities and professional support. Along with community health initiatives, starting on World Oral Health Day, 20th March 2018.”

A special thank you was made to CAPP, Philips/Jordan and Oral B/Crest for their support of this event and ongoing activities the EDHC have planned. Dental Hygienists who are interested to join the EDHC are encouraged to contact the club directly through the official website.

Hanan Abdalla, Rachael England and Mary Rose Rachael England, Dr Shiamaa Shihab Al Mashhadani and Hanan Abdallah

By Emirates Dental Hygienist’s Club

January - February | No. 1, Vol. 8

www.dental-tribune.me

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The prevalence of caries and other oral diseases is a worrying trend

Interview with Corrie Jongbloed-Zoet on caries

By DTI

One of the primary ways in which oral health can impact the quality of life is through its economic burden. In Europe, traditional curative treatment accounts for 5–10 per cent of total public health expenditure. The Platform for Better Oral Health in Europe forecasts that the total cost will rise from €64 billion in 2000 to €93 billion in 2020. Oral diseases are a five-year-old child of age, ensuring that there is no financial disincentive. In spite of these prevention programmes, the proportion of Dutch youths with no caries experience has not dropped over the last 30 years and has remained stable.

It was clear from this that an alternative approach to caries prevention needed to be tested. Working from the basis of a study conducted in Denmark, a group of dental researchers in the Netherlands trialled a non-operative caries treatment and prevention programme with a pool of 6-year-old children. This programme, which promoted recall intervals based on individual risk assessment, resulted in a 40–70 per cent reduction in caries for the group subjected to the NOCTP method.

Prevention spoke with Corrie Jongbloed-Zoet, President-elect of the International Federation of Dental Hygienists (IFDH), about how the principles of these scientific studies are applied to a programme implemented by Dutch society for the promotion of oral health “Ivoren Kruis’s Gewoon Gaaf.”

What are the principles upon which the NOCTP approach is founded, and how do these differ from conventional caries prevention approaches?

NOCTP is based on individual risk assessment, extensive oral hygiene instruction and education, and parental home care. In contrast, we have the regular Dutch protocol that is based on dental check-ups twice a year, fluoride application and sealants and if necessary restoration of caries on the dentine threshold.

The protocol is based on the understanding that caries is a localised process that can be prevented by brushing with a fluoride toothpaste. Extensive oral hygiene instruction and education are given and recall intervals are made on an individual basis using the following criteria: the cooperation of the parents, the activity of carious lesions within the dentine, the eruption stage of permanent molars and carious activity affecting the occlusal surfaces of the first permanent molars. Unfortunately, we see a great deal of very progressive carious activity in primary dentition and in first molars, especially among young migrant children and in lower socioeconomic groups.

Could you please take us through the protocol of the Ivoren Kruis’s Gewoon Gaaf programme?

The first appointment is made with a dentist or a dental hygienist and is followed by a demonstration of visible plaque and education and training in plaque removal by the patient and motivational interviewing. After professional plaque removal, a digital radiograph is made and the treatment continued. In the case of no caries progression, a risk and interval assessment is determined. In the case of caries progression, treatment, education and training are followed by fluoride application, sealing or restoration.

Step 1 During the first visit, the patient and his or her parents are informed about the programme and asked about their motivation to participate, problems, previous experiences, fear, stress, etc.

Step 2 After disclosing of the plaque, the level of oral hygiene and self-care is noted—plaque index—followed by information and instruction. The patient or his or her parent is asked to remove the plaque him- or herself.

Step 3 The next step in the NOCTP protocol is professional cleaning.

Step 4 A very important factor for risk assessment is the diagnosis of carious activity: small pits and severe caries.

Step 5 The next step is motivational interviewing, which is the key to success. The patient is prepared for implementing change and this might need multiple sessions. If the patient is ready to change, he or she is instructed—through explaining, showing and doing—and motivated and coached, with the intention that he or she will change his or her attitude towards oral health and his or her behaviour.

Step 6 If necessary, fluoride is applied on white spots or areas difficult to reach with a toothbrush. If the patient is not able to reach erupting molars with a toothbrush, sealants are applied to these and only if necessary.

When it comes to the prevention of caries in children, what role do parents’ attitudes play?

The programme focuses on behavioural change: the patient and/or his or her parents are encouraged to take responsibility for his or her oral health. In the study, the parent’s attitude turned out to be a decisive factor. There are parents who are conscious and responsible, but also a group who are trivialising and retaliating, appearance-driven and open-minded, knowledgeable but defensive, or conscious and concerned. The health care providers are trained over several days to be familiar with these differences and to consider them in their approach towards the patient’s parents. After informed consent has been obtained, parents are asked to fill in a questionnaire to provide information on socioeconomic circumstances, oral hygiene habits, oral health history, dietary habits, self-care routines and knowledge on dental topics.

What role does the IFDH play in the promotion of oral health in Europe?

The IFDH is an international non-governmental organisation registered in the US that unites dental hygienist associations from around the world (32 countries) in their common goal of promoting oral health and preventing oral disease. The federation represents approximately 85,000 dental hygienists. All European countries where dental hygiene associations exist are members of the IFDH and of the European Dental Hygienists Federation (EDHF). The IFDH and EDHF work together towards their common goal of improving oral health worldwide with partners like the Alliance for a Cavity-Free Future, the Global Child Dental Fund and the Platform for Better Oral Health in Europe.

References

NEW COLLECTION

EXPERIENCE OUR ENTIRE COLLECTION AT WWW.CROIXTURE.COM
Curaden believes in prevention like no other company in the world

By Ueli Breitschmid, Curaden

When Dental Tribune approached us with the idea of a new magazine on the topic of preventive dentistry, I thought: “Well, it’s about time! You should have done this a while ago!” For those who don’t know me, I often like to speak from the heart and the dental industry lies very close to my heart. I’ve been in the business my entire life and I’ve been the CEO of Curaden AG for 40 years. Curaden produces oral healthcare products, such as the famous CS 5400 toothbrushes, through our brand CURAPROX. We also provide many educational programmes, such as iTOP (individually trained oral prophylaxis). I am so proud to be a part of such a forward-thinking company, since I truly believe that no mouth will ever change without the use of the right instruments and proper education.

At Curaden, we are proud to manufacture all our products in Switzerland, since the Swiss are known for their high quality, perfection and precision. Yet I was disappointed to hear that one in every three dental students in Switzerland leaves dental school before their graduation. Supporting the Swiss dental schools is very high for other industries, but not for dental medicine. And, why don’t we consider dentistry as another medical discipline that works closely with cardiology, otolaryngology and other specialist fields?

Until now, we have educated dentists to become “tooth-repairers”. Dentists learn to place implants in the most difficult positions possible, they learn to perform endodontics in the most severely curved canals, but when do they learn how to educate their patients on oral health? When will we understand that a healthy mouth is about more than just clean teeth? And when will we understand that our mission should be to keep patients healthy for a lifetime by providing them with the right products and education?

Of course, as a dental industry, we still need to sell toothbrushes, interdental brushes and mouthwashes. Many other companies in the dental industry need to sell implants, endodontic files and drills. Essentially, all manufacturers, dealers and dental professionals still need to look at remaining profitable or increasing profits. And there is no doubt that, as an industry, we will still need to repair. Fortunately, our restorations have improved and can now last forever, but our preventive care can definitely be improved.

Mind the trends

The demand for preventive care has rather recent roots. Firstly, the megatrend of having a healthy lifestyle has now also moved into oral care. People want better oral prophylaxis, beautiful teeth and fresh breath. Oral care, however, is about so much more than oral hygiene. Healthy teeth and gums go hand-in-hand with self-confidence, a good morale and can also lead to healthy bodies. Essentially, the desire for a healthier lifestyle has created a demand for new products and new approaches to provide the patient with oral healthcare services in dental practices.

Secondly, scientists have discovered that oral health conditions have a major impact on people’s general and mental wellbeing. Oral health...
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“When will we understand that our mission should be to keep patients healthy for a lifetime by providing them with the right products and education?”

Tap water good for teeth but may cause higher blood lead levels

By DTI

CHAPEL HILL, N.C.: American children and adolescents who drink tap water, which is typically fluoridated, are much less likely to have tooth decay, according to a new study. However, researchers have confirmed that those who consume tap water are more likely to have elevated levels of lead in their blood as compared to those who primarily drink bottled water.

Dr. Anne Sanders and Gary Slade, of the Department of Dental Ecology at the University of North Carolina in Chapel Hill, analyzed a nationally representative sample of nearly 16,000 children and adolescents ages two to nineteen years old, who participated in the National Health and Nutrition Examination Survey (NHANES), from 2005 to 2014. More than 12,000 records included data on blood lead levels and about 3,500 contained dental caries examination data. NHANES is the U.S. benchmark for the national surveillance of blood lead levels and is the sole national source of dental examination data.

Following an at-home interview, participants visited a mobile examination center where they donated a blood sample, completed a dietary interview and underwent a dental examination. An “elevated blood lead level” was defined as having at least three micrograms of lead per deciliter of blood. “Tooth decay” was defined as the presence of one or more tooth surfaces that are affected by decay, as determined by dental examiners using a standardized protocol.

According to the results of the study, children and adolescents who did not drink tap water (about 15 per cent) were more likely than tap water drinkers to have tooth decay, but were less likely to have elevated blood lead levels. Those who drank tap water had a significantly higher prevalence of elevated blood lead levels than children who did not drink tap water.

Overall, nearly 5 per cent of children and adolescents had elevated blood lead levels and almost 10 per cent had tooth decay. Among American children and adolescents, one in five living below the federal poverty level, one in four African Americans and one in three Mexican Americans do not drink tap water—vastly exceeding the one in twelve non-Hispanic, white children who do not.

“Elevated blood lead levels affect only a small minority of children, but the health consequences are pronounced and permanent,” explained Sanders. “On the other hand, tooth decay affects one in every two children, and its consequences, such as toothache, are immediate and costly to treat.”

The study’s statistical analysis also took into account other factors that could account for the relationship between the non-consumption of tap water and blood lead levels and tooth decay. A limitation of the study was that the fluoridation status of the participants’ tap water was unknown, therefore the observation that drinking tap water protects against tooth decay may be an underestimate of fluoride’s protective effect.

“Our study draws attention to a critical trade-off for parents: children who drink tap water are more likely to have elevated blood lead levels, yet children who avoid tap water are more likely to have tooth decay,” commented Slade. “Community water fluoridation benefits all people, irrespective of their income or ability to obtain routine dental care. Yet, we jeopardize this public good when people have any reason to believe their drinking water is unsafe.”

Public awareness of the hazards of lead-contaminated water has increased since 2014, when concerns were raised after the drinking water source for Flint in Michigan was changed to the untreated Flint River. A federal state of emergency was declared and Flint residents were instructed to use only bottled or filtered water for drinking, cooking, cleaning and bathing.

HYPERSENSITIVITY DUE TO TOOTH EROSION CAN BE GONE WITHIN SECONDS* WITH COLGATE® SENSITIVE PRO-RELIEF™ TOOTHPASTE

The risks that carbonated soft drinks, alcoholic mixers and wine pose to your patients’ teeth are well-known – increased consumption of acidic food and drinks can lead to tooth erosion and hypersensitivity.

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The Pro-Argin™ Technology of Colgate® Sensitive Pro-Relief™ toothpaste physically seals dentine tubules with a plug that contains arginine, calcium carbonate and phosphate. The plug effectively reduces dentine fluid flow reducing sensitivity and relieving pain in seconds.* 2, 3

**COLGATE® SENSITIVE PRO-RELIEF™ IS CLINICALLY PROVEN TO RELIEVE PAIN IN SECONDS**

In a double-blind, parallel group study, 120 patients directly applied either Colgate® Sensitive Pro-Relief™ toothpaste, a regular desensitising toothpaste† or a regular toothpaste‡ to sensitive teeth. Change in hypersensitivity was assessed using air blast sensitivity scores, where a lower score indicates better pain relief.

Not only did Colgate® Sensitive Pro-Relief™ provide instant relief of dentine hypersensitivity, both immediately after direct application and after 3 days of use, but it also provided superior pain relief when compared with the other toothpastes.

**INSTANT AIR BLAST SENSITIVITY RELIEF IN VIVO**

<table>
<thead>
<tr>
<th>Sensitivity relief</th>
<th>Air blast sensitivity score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baseline</td>
<td>Control with KNO₃ and NaF</td>
</tr>
<tr>
<td>Immediately</td>
<td>Control 2 with MFP</td>
</tr>
<tr>
<td>3 days</td>
<td>Colgate® Sensitive Pro-Relief™ toothpaste</td>
</tr>
</tbody>
</table>

* p < 0.05 compared to baseline  • p < 0.05 compared to control

Recommend Colgate® Sensitive Pro-Relief™ to your patients suffering from hypersensitivity due to acidic tooth erosion – clinically proven to treat hypersensitivity and relieve pain fast.* 2

* When toothpaste is directly applied to each sensitive tooth for 60 seconds.
† Containing 5% potassium nitrate and 1450 ppm fluoride as sodium fluoride.
‡ Containing 1450 ppm fluoride as MFP.

References:
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Augmentation and implant treatment

Two-stage surgery in the severely resorbed edentulous mandible

By Dr. Marko Nikolic, Croatia

Introduction
An adequate bone volume at the future implant site is a prerequisite for ideal implant placement and implant success. A residual bone with a vertical dimension less than 5.0 mm indicates a cut-off point and implies the need for additional augmentation procedures in connection with implant insertion, whereas higher values of the alveolar crest ≥ 5.0 mm are considered to be sufficient for treatment with standard-diameter implants without the urgent need of any horizontal bone augmentation.

Distant donor sites like the anterior and posterior iliac crest and intraradial areas like the retromandibular and the interforaminal region of the chin are common sources for harvesting autogenous bone grafts. Depending from the donor site, patient and surgeon should be aware of the possible confrontations with various advantages but also disadvantages when harvesting the bone. Harvesting bone from the iliac crest requires patient hospitalisation, and surgery under general anaesthesia, whereas intraradial bone harvesting can be performed ambulatory and under local anaesthesia.

The main problem with autogenous bone grafting is represented by the high risk of patient morbidity, causing pain, swelling, and healing problems at the donor site. The aim of this case presentation is to demonstrate a predictable, two-stage operating protocol for the horizontal augmentation of the severely resorbed, edentulous anterior mandible with an autogenous bone graft, harvested from the crestal alveolar ridge at implant site, in order to create a sufficient bone volume for the later implant therapy, without donor morbidity for the patient.

Patient data
The 47-year-old male patient visited our dental office in order to renew his old and poor fitting prostheses in the lower jaw and in the upper jaw. The remaining five teeth 32–45 in the front of the lower jaw had been removed three months previously due to a chronic periodontitis in our dental practice. Nearly all remaining teeth in the upper and the lower jaw showed significant signs of progressive chronic periodontitis, insufficient root treatments and prosthetic superstructures as well (Fig. 1). The medical history of the patient was without any significant pathological findings.

Diagnostic procedures
In cases of long-term edentulism, the dental surgeon is almost always confronted with a reduced bone volume, representing both a major challenge and a significant demand for the use of diagnostic imaging methods prior to augmentation and implant treatment. Conventional X-ray images contain only a two-dimensional information concerning the vertical height of the alveolar bone. Therefore, they represent an insufficient method for the appreciation of the horizontal bony dimensions. In comparison, three-dimensional (3-D) diagnostic tools like cone beam computed tomography (CBCT) offer the advantage of the visualisation of the so-called ‘z-axis’, representing the bone volume in the horizontal, i.e. bucco-lingual dimension of the alveolar crest respectively. A proper treatment planning and the use of 3-D diagnosis are therefore crucial parameters for a predictable and sustainable final treatment outcome in implant therapy, especially in patient cases with severe resorption of the jawbone, like in our presented patient case.

The oral examination and the CBCT-Scan (SCANORA, Soredex, Schutterwald, Germany) revealed a distinct bone resorption in the lower jaw, showing a more pronounced horizontal atrophy in the anterior part of the mandible (Figs. 2a & 2b). According to the clinical measurements and the values of the 3-D CBCT scan, the interforaminal vertical bone height was between 22.0–25.0 mm. The horizontal bone volume amounted between 12.0–14.0 mm in the implantation zone. The CBCT-Scan revealed a horizontal cortical bone thickness of 1.09 mm in region 32, and 1.73 mm in region 44.

Treatment planning and augmentation procedure
After patient-consultation, we opted for a two-stage surgery with an intraradially harvested autogenous bone-graft and a delayed implant treatment after a healing period of at least four months. As the vertical dimension of the implant region appeared to be sufficient enough for placement of implants with a standard length, we decided to cut off 5.0 mm of the thin and sharp-edged alveolar bone ridge by osteotomy, in order to create an autogenous lateral onlay bone-graft for horizontal augmentation in the anterior alveolar ridge. This protocol comprised in our view the advantage of the avoidance of donor morbidity, because the donor site was the receptor site as well. After creation and mobilisation of the maxillary flap, the very thin and sharp edge of the atrophied alveolar crest became visible (Fig. 3). The osteotomy of the bone was performed with a saw (Bone splitting system, Helmut Zepf Medizintechnik GmbH, Seitingen-Oberflacht, Germany; Figs. 3 & 4). Subsequently, the graft was detached from the anterior mandible
ble with chisel (bone splitting system, Helmuth Zepf, Medizintechnik GmbH, Settingen-Oberlacht, Germany), Fig. 6) and a cortico-cancellous bone block was obtained (Fig. 7). The bone graft was fixed at the buccal side of the anterior mandible (region 34–44) with four 8.0 mm long titanium microscrews (Storz am Mark GmbH, Emmingen-Lippingen, Germany). Fig. 8). A combination of autogenous bone chips and particulated xenograft (BEGO Oss, BEGO Implant Systems, Bremen, Germany) was placed in the small remaining space between the bone block and the alveolar process, as well as around and on the bone graft. The augmented site was covered with a planer rich in growth factors (PRGF) membrane (BTI Biotechnology Institute, Blue Bell, USA) and additionally with a barrier membrane for guided bone regeneration (GBR, Bio-Cide, Gea-Lich Biomaterials Vertebragen- schaft mbH, Baden-Baden, Germany; Fig. 9). The healing of the graft was uneventful and without any complications, like membrane exposure, being classified as a frequent post-operative complication. The patient was provided with a removable provisional prosthesis.

Re-entry and implant surgery

The re-entry for the delayed implant placement protocol was planned after a healing period of four months. With regard to the soft aspect of the augmented area of the anterior mandible, the dimensions of the alveolar ridge appeared sufficient enough for implant placement (Fig. 10). The CBCT data confirmed the assumption, demonstrating a significant gain of bone volume in the interforaminal zone of the mandible after augmentation. The horizontal thickness of the crestal alveolar bone was 5.53 mm in region 44 and 4.43 in region 22. The augmentation procedure resulted in a horizontal bone gain of about 3.9 mm in region 44 and 3.5 mm in region 32 respectively, representing a mean bone gain of 3.6 mm (Fig. 11). Prior to implant placement, the fixation screws were removed. The four implants with a diameter of 3.75 mm and a length of 11.5 mm (BEGO Semados®, Bego, BEGO Implant Systems) were inserted epicrestally in regions 31, 32, 43 and 45 using the frehand-method without a surgical guide (Fig. 12). The insertion torque of the implants was 35 Ncm with good primary stability.

Pre-prosthetic surgery and prosthetic rehabilitation

After three months of uneventful submerged healing, the panoramic X-ray showed a successful implant osseointegration without any signs of bone resorption (Fig. 14). Due to a lack of keratinised gingiva, we decided for an enlargement of the ratio between attached and free gingiva by performing mucogingival surgery with the Edlan-Mejchar method (Figs. 15, 16 & 17). After an additional healing period of one month, the fixation screws were removed, and with regard to a horizontal osteotomy was incorporated. The two-stage protocol comprised inter alia the possibility for an implant placement in an ideal position for the later prosthetic restoration under visual control. Another reason for open access for implant placement was the use of non-removable microscrews for the stabilisation of the bone graft. The decision to utilise

Discussion

In our case presentation, the patient suffered from an extremely horizontal bone resorption, resulting in a 10–15 mm thin, and knife-edged alveolar crest. Since standard diameter dental implants need a certain crestal bone volume for an adequate stabilisation and a good predictability of osseointegration, augmentation procedures had to be performed prior to implant treatment. A recently published meta analysis showed that dental implant survival has probably to be seen independently of the biomaterial used in augmentation procedures. By this evidence is limited by the fact, that defect size, augmented volume, and regenerative capacity are scarcely well described in literature. Autogenous bone is still recommended as the ‘gold standard’ for augmentation in the deficient alveolar crest. Simultaneous grafting and augmentation is the standard procedure in ridge augmentation, resulting in an extended operating time.

Fortunately, as the vertical dimension of the anterior mandible was high enough in our clinical case, we were able to harvest an adequate autogenous bone block from the thin alveolar crest, in order to use it as an onlay graft for the horizontal augmentation of the anterior mandible. This procedure avoided donor site morbidity, and resulted in less operating time and a reduced patient discomfort. The dimensions of the graft were ideal for lateral augmentation, so that there was no need for any additional carving of the bone block. As mean bone gain after healing of the autogenous graft was 3.6 mm in our patient, it was slightly smaller compared to the average bone gain of 4.3 mm, as reported in a systematic review by Jensen and Tverhøyden in 2009, but was comparable to the findings of a recent review by Sanz-Sánchez et al., showing a mean bone gain in horizontal defects of 3.9 mm in a staged approach. Nonetheless, we gained enough bone volume for insertion of four standard diameter implants. Considering the fact that the fixation screws had to be removed, and with regard to a number of benefits of a delayed implant placement in augmented deficient alveolar ridges, we opted for a two-stage protocol. Even though delayed implant placement with flap elevation required a second surgical intervention and therefore an additional burden for the patient, it comprised the additional advantage of a visual and tactile assessment of the horizontal augmentation of the autograft in our patient case. Another crucial advantage of the staged approach comprised inter alia the possibility for an implant placement in an ideal position for the later prosthetic restoration under visual control. Another reason for open access for implant placement was the use of non-removable microscrews for the stabilisation of the bone graft. The decision to utilise
Simplicity without compromise with the Astra Tech Implant System® EV from Dentsply Sirona Implants

By Dentsply Sirona Implants

Dentsply Sirona Implants presents the next step in the continuous evolution of the Astra Tech Implant System®. The Astra Tech Implant System EV® is designed with a site-specific, crown-down approach based on the natural denition for increased surgical simplicity and flexibility and restorative ease — without compromising the unique Astra Tech Implant System BioManagement Complex®.

The main objective of the new system is to further improve system logic, robustness and user friendliness, and simplicity without compromise has permeated the evolution of the Astra Tech Implant System IV. The new system is also the result of collaborative input and insights from dental professionals throughout the global dental industry.

“When we develop new implant therapy solutions, it is important that they meet actual clinical needs. With our solutions, clinicians are able to solve these various challenges and, as a result, they can deliver long-term function and aesthetics to their patients. Our focus is to deliver safe, well-documented solutions and the best service to our customers,” says Björn Delin, DDS, and Vice President Global Platform Implant Systems at Dentsply Sirona Implants.

The foundation of this evolution-ary step is the unique Astra Tech Implant System BioManagement Complex®, well documented for its long-term marginal bone maintenance and aesthetic results provided by the combination of four key features: the OsseoSpeed surface, Microridge, Conical Seal Design and Connective Contour.

Astra Tech Implant System® EV highlights:
- Versatile implant assortment
- Flexible drilling protocol that allows for preferred primary stability
- User-friendly surgical tray with three interchangeable overlay options
- Colour-coded assortment
- Unique interface with one-position-only placement of Atlantis patient-specific abutments
- Self-guiding impression components
- One system—one torque

OsseoSpeed® Profile implants
Almost 40% of all implant sites present with a sloped alveolar ridge after healing. The OsseoSpeed Profile EV implant (Astra Tech Implant System®) is a uniquely shaped, patented implant specifically designed for just this clinical situation. It is designed to follow the natural shape of the bone, supporting the soft tissue while preserving marginal bone plus degrees around the implant. In addition, it can help to eliminate the need for bone augmentation procedures, 93% of all sloped implant sites have a reduced need for augmentation when using the OsseoSpeed Profile implant.

OsseoSpeed Profile EV is the second generation of the uniquely shaped, patented implant specifically designed for sloped ridge situations that was first introduced in 2011. The implant is now upgraded with the simplicity and design principles of the Astra Tech Implant System® EV. Newer published results on OsseoSpeed Profile implants show bone preservation, increased soft tissue volume and regain of keratinized mucosa in patients with compromised soft tissue conditions. PD Dr. Robert Nelkin, co-author of the study, explains: “We have seen a great deal of improvement on the peri-implant soft tissue in our research follow up. This allows us to achieve a good aesthetic outcome for patients with thin biotypes.”

This prospective, 2-year follow-up, multicenter study—investigated OsseoSpeed Profile EV implant survival, soft tissue and hard tissue maintenance following placement in healed sites of the posterior mandible. Twenty-four centers, 184 patients and 218 implants were included in the study that showed >99% overall survival rate and an average bone level reduction of 0.3 mm.

The SmartFix® concept
SmartFix® is available for the Astra Tech Implant System® IV, including OsseoSpeed Profile EV.

Conclusion
The staged approach with the use of an autogenous bone graft, harvested from the surgical site in the anterior mandible, resulted in a significant horizontal bone gain, and took to a good osseointegration of both, autograft and implant. Obviously, the described grafting procedure has not been previously reported in literature. Despite the lack of any experience reports, our method revealed nonetheless a successful rehabilitation with an implant-supported, screw-retained prosthetic rehabilitation, and is still in function without any biological or technical problems after a three-year follow up.

Special thanks to Dr Pantelis Petralakis.

References

For more information and highlights of the new Astra Tech Implant System® IV, please visit www.dentsplyimplants.com
research
Morbidity after harvesting of autologous pelvic bone
case report
Bimaxillary implant restoration by all-ceramic bridges
interview
A nuanced perspective on periimplantitis

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Virtual reality and orthodontics: A new patient experience

By Dr Yassine Harichane, Canada

Imagine the following scenario: your patient arrives, both relaxed and calm, at your practice. Although the patient is visiting the practice for the first time, he is familiar with it and knows its interior well. Without further introduction, the patient takes a seat in the dental chair, and the orthodontic procedure is performed quickly and comfortably with patient compliance. There are no complications or tension, and the treatment is easily achieved. Imagine such a soothing and comfortable environment in which to treat patients. Now imagine this very same scenario through the eyes of the patient. One can see that it could actually be a comfortable experience. This is not some hypothetical futuristic utopia; this is actually happening now, and the aforementioned points are some of the many benefits of virtual reality (VR).

VR is a process that entails immersing the viewer in a 360° environment. By turning his head left, right, up or down, the patient can visualise a real or an artificial environment. The spectator could be immersed in the Caribbean Sea surrounded by corals or in a Canadian forest (Fig. 1). The operation is simple: the participant wears a lightweight and comfortable headset in which a smartphone is inserted (Fig. 2). Owing to the gyroscopic sensors, the smartphone will project a matching image corresponding to the movements. If the patient raises his head, he will see the sky or the ceiling, and if he lowers his head he will see his feet. This technique is made possible by a 360° shot using a dedicated camera (Fig. 3) and simple editing software (Fig. 4). The result is simply astonishing as we find ourselves projected into a place that may vary from actual tourist sites to virtual scenarios as in video games. The applications in orthodontics are numerous and at present we are exploiting only a tiny part of its potential functions. The possibilities might be endless. Hence, it might become possible for the patient to visit the dental office from his home, where he can visualise the front desk, admire the treatment rooms or view the cleanliness of the sterilisation room (Fig. 5). The aim is to offer a virtual visit of the practice to allow the patient to choose a quality clinic, as well as familiarise himself with the space before his first appointment. Once physically seated in the chair, the patient can wear the VR headset during the treatment and visualise a restful environment of his choosing.

Fig. 1: Canadian forest in VR.

Fig. 2: VR headset.

Fig. 3: Nikon KeyMission 360°.
Use of diode laser in the treatment of gingival enlargement during orthodontic treatment

Case report

By Prof. Carlo Fornaini, Drs Aldo Opici, Luigi Cella & Elisabetta Merigo, Italy

Introduction

In recent decades, we have witnessed the substantial development and expansion of the use of fixed orthodontic appliances. While their application has many advantages, several problems related to the health of the soft tissue may sometimes appear during treatment. In fact, the use of fixed orthodontic appliances may provoke labial desquamation, erythema multifforme, gingivitis and gingival enlargement.1 Gingival enlargement is a very common complication during orthodontic treatment, but fortunately, it seems to be transitory and generally resolves after orthodontic therapy, even if sometimes incompletely. Gingival overgrowth induced by orthodontic treatment shows a specific fibrous and thickened gingival appearance, different from fragile gingiva with marginal gingival redness common in allergic or inflammatory gingival lesions.2

Several clinical studies suggest that orthodontic treatment may be associated with a decrease in periodontal health, causing a hypertrophic form of gingivitis. However, the actual pathogenesis of gingival enlargement is not yet completely understood, although probably involves increased production by fibroblasts of amorphous ground substance with a high level of glycosaminoglycans. Increases in mRNA expression of Type I collagen and up-regulation of keratinocyte growth factor receptor could play an important role in excessive proliferation of epithelial cells and increased development of gingival overgrowth.3

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Fig. 1: Clinical view showing gingival enlargement, just before the debonding procedure.

Fig. 2: Application of a topical anaesthetic.

Fig. 3: Surgical laser-assisted treatment via laser gingivectomy.

Fig. 4: Clinical view just after surgery.

Fig. 5: Healing five days after surgery.

Fig. 6: One-month follow-up.
The role of 3-D imaging systems in present orthodontics

By Dr Enrique Gonzalez García, Mexico

Abstract

Traditionally, the diagnosis in orthodontics gives a lot of importance to cephalometry and the analysis of the dental casts. The development of new technologies does not intend to discard traditional concepts, in fact, it intends to provide more information allowing a wider approach of our patients and resulting in a more thorough diagnosis.

Introduction

Adapting to new three-dimensional concepts is not an easy task and is even harder considering that the information is so vast that it can result overwhelming. That is why when evaluating a patient for orthodontic treatment, it is intended to use a systematic method so that we can obtain the most essential information that these methods provide.

The method consists of the followings:

- Sagittal plane and axial plane.
- Coronal plane

General visualizations

To perform a general exploration, it is necessary to know the three anatomical planes of the patient or, like in some cases, a deeper knowledge of the anatomy of the patient or, like in some cases, a number of findings that might result from the modification of our treatment plan.

Sagittal plane

The sagittal plane divides the skull in two symmetrical parts. Has a transversal orientation allowing examining two segments: right and left.

Axial plane

The axial plane is parallel to the floor and the occlusal plane. It divides the skull in two equal parts: superior and inferior, allowing the view of structures from top to bottom and bottom to top. The overview of these three anatomical planes should give the specialist a complete exploration of the 3D anatomy. The result is a deeper knowledge of the anatomy of the patient or, like in some cases, a number of findings that might result in the modification of our treatment plan.

Teeth and surrounding bone structures

For obvious reasons, one of the main areas to check is the dental zone. Images that allow to check the teeth that are present and the ones in process of eruption, if that is the case, should be generated. As well as the characteristics of the adjacent bone and even take some numeric references.

Airways and paranasal sinuses

Breathing is the foundation of life. CBCT scans offer a precise visual of the airways and surrounding transfacial structures that influence them, such as the mandible, palate, paranasal sinuses, facial relations, adenoid...
The evaluation of the soft tissues in a three-dimensional system and without magnification is ideal for the orthodontist because he/she can now evaluate the patient fully with one exam, completely changing his/her perspective. Previously, with 2-D images we only had the possibility of making an unilateral evaluation of the skull and structures unless, of course, several X-rays were taken and complementary analysis in each of them. The other option was performing photographic analysis to see the facial aesthetic from different photographic angles and requiring a major number of shots that surely resulted difficult for the patient. The diagnostic evaluation with 3-D systems allows in one exam to evaluate the patient from the angles necessary as well as evaluating the soft- and hard-tissues resulting visually stunning and attractive for the patient, being this extremely positive considering that the patient has a better understanding of his/her aesthetic problems and how the specialist will proceed to eliminate them.

Soft tissues: The evaluation of the soft tissues in a three-dimensional system and without magnification is ideal for the orthodontist because he/she can now evaluate the patient fully with one exam, completely changing his/her perspective. Previously, with 2-D images we only had the possibility of making an unilateral evaluation of the skull and structures unless, of course, several X-rays were taken and complementary analysis in each of them. The other option was performing photographic analysis to see the facial aesthetic from different photographic angles and requiring a major number of shots that surely resulted difficult for the patient. The diagnostic evaluation with 3-D systems allows in one exam to evaluate the patient from the angles necessary as well as evaluating the soft- and hard-tissues resulting visually stunning and attractive for the patient, being this extremely positive considering that the patient has a better understanding of his/her aesthetic problems and how the specialist will proceed to eliminate them.

Temporomandibular joint: The TMJ is, by definition, a ginglymus diarthrodial complex joint. This complexity is reflected in the knowledge and importance that each professional gives it. There are a number of specialists for whom the TMJ is remote from the teeth and does not interfere with orthodontic treatment. On the extreme opposite side, for the other group of specialists, the TMJ is the foundation on where they base all their treatments. Whichever concept the doctor has on this, the evaluation of the TMJ should be included in the diagnosis.

Conclusion: The specialist cannot be unaware of the constant advances in technology. Of course, these developments have to be taken in moderation and with responsibility because it does not substitute the knowledge acquired during ones professional training and even less the experience obtained from treating patients. Needless to say, an effort is required for the training and understanding of these new systems but such systems are every time easier and perceptibles and the quality, quantity and usefulness of the information it generates is unquestionable. It is important to remember the concept that we are healthcare providers and our goal is more than just straighten teeth. Therefore, it is mandatory to diagnose our patients fully and when necessary, seek consultation from other specialists, since nowadays a great number of our patients require multidisciplinary treatments.

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Can we treat patients in fewer visits?

By Dr. Skander Ellouze, Tunisia

“We live very far away, in the Congo, but we come to Tunis twice a year, in December and August. We would like you to be our children’s orthodontist, and sincerely hope that you will accept them as your patients.”

After a review of the patient’s records and a brief period of reflection, I decided to begin treatment for T., aged 13 (the youngest sibling required no treatment at that time). The patient would be seen only twice a year, during his holidays in December and August.

What was the total length of treatment?
The treatment lasted 22 months and required 5 visits, including the bonding and debonding appointments. In modern orthodontics, we are continuously striving to adapt to a changing world and to respond to emerging needs (comfort, esthetics, hygiene, etc.). Minimizing time commitments during the treatment process (shorter treatment duration, fewer visits) is an important part of this development. Aligner treatments have already started to emerge, this trend is now even more pronounced. Fewer visits to those required to begin and end treatment!

Is it possible to monitor long-distance patients undergoing multi-band treatments?
The light, passive force of the Damon system enables phases. This enables the force system to act “gently” on the periodontal complex.

This raises two key questions:

Is it possible to take this concept even further?

Imagine being able to provide treatment to patients in just a few appointments, with the added benefit of:

• enabling patients (children and adults) to reduce the number of visits to the office to just 4 to 5 over the course of their treatment.
• reducing wait times as well as the number of calls and reminders managed by office staff.

How do we keep this approach from having a negative impact on the quality of treatment?
This article offers ideas and provides a starting point. It introduces the possibility of rethinking the appointment schedule for orthodontic treatments, which—in addition to saving time—opens up new opportunities for patients, by more easily offering them a greater choice of practitioners. (Patients would no longer have to choose a less favorable practitioner based simply on the proximity of his or her office in order to make it to monthly appointments.)

• for practitioners, by enabling them to more confidently take on a growing number of long-distance patients.

Codyling these new fixed appliance treatment modalities could establish an entirely new standard.

My thoughts:
We now have the possibility of managing our offices based on this “spread out” scheduling, with fewer visits to the chair. It can be implemented in the majority of cases, with a few minor exceptions such as those involving impacted teeth. Without this possibility, we would be forced to turn away patients, with whom a good relationship had already been established, and to make sometimes risky patient referrals.

Such a treatment is typically completed in 4 to 6 appointments spread over 6 to 12 months, without having a negative impact on the final outcome. In fact, these long breaks between visits can even be beneficial in terms of tissue integrity.

CASE NO 1
T.F. was 13 years old at the time of his first visit

Diagnosis:
Class I incisal-canine crowding in both arches
Class II long face syndrome, hyperdivergent
Retrusive chin
Presence of wisdom teeth buds

Treatment Plan
Non-extraction treatment
Alignment - levelling
Obtain a functional occlusion and accentuate the smile arc.
VISIT NO 1
Both appliances bonded on the same day.
SAP bracket placement

Torque Selection
Maxilla: Super low torque on the incisors – super torque on the canines.
Mandible: Low torque on the incisors – super torque on the canines.

014 CN archwires were placed along both arches, from the 1st molar to the 1st molar, without stops.
Bite turbos were bonded to 13 – 23 in order to unlock the occlusion, promote leveling, and protect the brackets on the lower arch.

VISIT NO 2: 4 MONTHS
The patient returned 4 months later. The arches showed excellent initial progress in terms of leveling.
New 014 archwires were placed to continue the leveling-alignment process. Anterior stops were placed on both arches.

VISIT NO 3: 10 MONTHS
Ten months into the treatment, the 014 archwires were kept on, and both arches showed excellent progress in terms of leveling-alignment. Crowding was fully resolved.

A panorex was done to confirm the proper placement of the initial brackets.
Only the maxillary central incisors (whose roots showed significant proclination) were rebonded with standard torque brackets.

Both arches were fitted with 16x25 CN archwires, and the bite turbos were gradually reduced.

VISIT NO 4: 14 MONTHS
It was as if time was doing the work for us. After just 2 visits over 14 months, a remarkable correction was observed in all 3 orders.
Nonetheless, 13 was repositioned to provide a more gingival placement and to correct tipping (see the panorex taken 4 months earlier, which shows an excessive tip-back of this tooth).

For the maxillary arch, the 16x25 CN archwire was replaced with an 18x25 CN archwire, and the mandibular arch was fitted with a 17x25 TMA archwire. The patient was also required to wear vertical intercuspation elastics on the upper canines.

The bite turbos were removed completely during this appointment.
VISIT NO 5: 21 MONTHS
Seven months later, the family returned to the office over the summer break.

A long appointment was scheduled to—if all went well—remove the appliances and put a retainer in place. The day of the visit, the decision was made to proceed. When I announced that the treatment would be completed that day, the patient and his parents had quite a memorable reaction: “Already? It went so fast! Thank you! He is going to have the best summer break!”

The results, although not perfect, were remarkable. The end-of-treatment records clearly show good tissue quality (periodontal and root integrity), undoubtedly thanks to the use of minimal force with long rest periods, a minimal number of archwires, and bonding which allowed for continuous improvement throughout the entire treatment, from beginning to end.

That same day, we began treatment for the youngest sibling, using the same protocol.

VISIT NO 6: POST-RETENTION PHOTOS +12 MONTHS
Today, 37% of my patients fitted with multibracket appliances are non-residents, meaning they live in another country, or even on another continent. These treatments would be impossible without this new flexible scheduling.

Even with these new treatment modalities, a certain level of precaution and organization is required in order to ensure continuous improvement (the promise touted by each new system on the market today):

• An appropriate prescription for the anterior torques.
• A SOLID bonding protocol (brackets and bite turbos) that eliminates the risk of bond failure almost entirely.
• Extremely precise brackets placement, reducing the need for repositioning.
• Biomechanical foreplanning: sufficient wire supply for leveling – proper placement of stops – lasting activation devices (coils, for example, rather than power chains) – anticipating biomechanical effects with the use of mini-screws, etc.

CASE NO 2
This patient, aged 15 years, was treated in 5 visits spread over 31 months. These photos show the treatment stages and the intervals between appointments. A Damon System was used to treat this case of a Class III malocclusion, with incredible results observed in the teeth and facial features.

CASE NO 3
This “spread-out” scheduling approach can also be applied to treatments involving extractions. In this case, the patient moved to Canada in the middle of her treatment (at 11 months), still with several spaces left to be closed. Having already undergone an initial 3 year treatment (see photos), the patient wanted to remain with the same orthodontist and agreed to travel from Canada every 6 months to continue her treatment.

After moving away, she was seen just 3 more times, including the debonding appointment.
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- Facial Scanning
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