Following the launch of the British Bite Mark last month, the Dental Laboratories Association have had an incredible response from UK dental laboratories wanting to be part of the DLA’s first ever campaign direct to the public. To date there are now 277 dental laboratories that have signed the declaration of compliance to the British Bite Mark with several hundred still waiting.

Speaking to Dental Tribune Richard Daniels, Chief Executive of the Dental Laboratories Association made it clear why he felt the campaign was necessary and what he hoped the outcome of the campaign would be.

**Outsourcing**

“The launch of the British Bite Mark campaign to promote British dental laboratories is of fundamental importance to the future of dental care. The campaign aims to highlight the importance of using British made dental products and the benefits they offer patients.”

It seemed appropriate to ask Richard why he felt there was a need for a campaign of transparency that effectively could by-pass the dentist in terms of offering patient information.

“From my perspective, the British Bite Mark campaign is like any other ‘Make in Britain campaign’, its aim is to provide the patient with an informed choice about their purchase, far from by-passing the dental practice, the campaign is going to actively embrace those dental practices that use registered British Bite Mark dental laboratories, over the coming months we will have information packs that dental practices can use free of charge to promote the fact that they use a British Bite Mark dental laboratory to ensure appropriate trained professionals are operating in the lab and that CE marked materials are being used.

The truth of the matter is that there are good and bad labs everywhere in every country, the comforting thought for patients here in the UK is that there is a significantly higher chance of them finding out here in the UK than anywhere else in the world and the easiest way of getting this message across is with an easily identifiable logo, that instantly offers patients peace of mind.”

When discussing the British Bite Mark campaign and its objectives, it is clear that Richard thinks the DLA have got it right, both for the patient and for the DLA membership. Dental Tribune asked Richard if he had received any resistance from the membership following the launch of the British Bite Mark, he said: “In all honesty, I have received three complaints, understandably all from members who have a commercial interest in dental laboratory outsourcing, but as I have said to them and anyone other party that has enquired, my mission is not to say that British dental laboratories are best or that dental practices that use overseas dental laboratories are bad but merely to encourage dental practices that use British Bite Mark dental laboratory’s should be proud, dental practices that use British Bite Mark dental laboratory’s should be proud and we want to help them promote the fact to their patients, frankly if the DLA don’t promote British dental technology, who is?”

Since 2004, the Dental Laboratories Association has proactively lobbied against custom made dental appliances manufactured outside of the UK, even though there has never been a need for a campaign of outsourcing dental laboratories over the coming months we will have information packs that dental practices can use free of charge to promote the fact that they use a British Bite Mark dental laboratory to ensure appropriate trained professionals are operating in the lab and that CE marked materials are being used.

British Dental Technology

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"In my opinion, dental laboratories that carry the British Bite Mark should be proud, dental practices that use British Bite Mark dental laboratory’s should be proud and we want to help them promote the fact to their patients, frankly if the DLA don’t promote British dental technology, who is?"
Tripping over triple trays

David Hands and Neil Photay shed some light on the pitfalls of using triple trays and how they could end up costing more than they are worth

The use of triple trays are becoming more common in the surgery to take an impression of prepared teeth (as well as opposing teeth) for the dental laboratory to prepare a fixed prosthesis such as a crown or bridge. With a thin, pliable mesh separating the impression material, the trays are used to simultaneously register the upper and lower bite. They tend to be seen by dentists as a cost-effective solution for taking impressions, but your dental technician may take a different view.

To prepare restorations of the highest quality and perfect fit, laboratories need to accurately register the patient’s bite. There is a very fine line between a perfectly fitting crown and one that causes the patient irritation - the difference can be a matter of millimetres. There are so many different techniques and products that a dentist can use to ensure they are taking impressions as accurately as possible, but in my opinion using a triple tray is not one of them.

Triple trays’ main downfall is that an impression of only four or five teeth is able to be taken. This makes it almost impossible for the technician to get a clear idea of the arrangement of the patient’s teeth, making it extremely difficult to create suitable restorations for them. Imagine being asked to cook a stranger their perfect meal, without being told which ingredients they don’t like! Essentially the chef is working blind, and this is the challenge dental technicians are faced with when they are sent impressions that are constructed using triple trays.

Along with the correct bite, technicians must also be able to assess the size and shape of the preparation margin and also of any adjacent teeth. The only way to do this effectively is to use stock trays which enable the dentist to take an impression of the full upper and lower arches. This really helps technicians to visualise for themselves how the patient’s bite, teeth and margin are formed.

‘There are so many different techniques and products that a dentist can use to ensure they are taking impressions as accurately as possible, but in my opinion using a triple tray is not one of them’
awkward to use. I frequently have to ask dentists to retake their impressions after receiving a model which shows that the patient has bitten through the tray into the mesh. Avoiding this can be tricky and a lot depends on how much material needs to be used and how deep the outside of the tray is. Having said that, with the right technique triple trays can be successfully used for small inlays but I would avoid using them for anything more complex, such as bridgework.

Another word of warning: triple trays may at first appear to be the cost effective method of taking impressions but my experience tells me otherwise. With their lack of consistency and inability to take an impression of full upper and lower arches, impressions frequently have to be retaken. This involves rescheduling appointments at great inconvenience to both the patient and the dentist, costing time and, ultimately, money.

Dental Technology schools heed a warning regarding triples trays as a source of inaccuracy and therefore a higher rate of device failure. Some even go as far as refusing to work on triple tray impressions at all.

Most laboratories will refuse to fabricate any bridge work on triple tray impressions, and rightly so, as the functionality of the bridge cannot be created or checked. If working only on the quadrant, the excursions of the full arch cannot be replicated which is essential information for the technician to have. Inevitably dentists may have to grind bridgework chair-side and create any guide planes by sight and feedback from the patient. Surely the cost of extended chair time is more than the cost of taking full arch impressions.

It can be very easy to become accustomed to using the system that you have done for years and it is understandable why at first clinicians might be loath to switch their impression tray. Nevertheless, I do believe that by using full arch stock trays, practitioners will benefit from more accurate restorations, a smoother service and an easier relationship with their laboratory. Likewise, the patient will receive an excellent restoration quickly and hopefully without having to return to the practice for a repeat impression.

By taking full arc impressions, dentists won’t have to extend patient chair time.

‘With the right technique triple trays can be successfully used for small inlays but I would avoid using them for anything more complex, such as bridgework’

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...and there’s still more to come
Ultra Suction Denture Stabilisation System
Mony Paz and Ted J Carson discuss suction dentures

Ultra Suction system increases the retention of mandibular complete dentures. There retentive capacity in comparison to conventional dentures has been positively demonstrated via retention tests and clinical observation.

A clinical study published in the EDA Journal (Jan. 2010 Vol. 56) shows a significant improvement in denture retention after the application of the Ultra Suction system. The aim of this article is to familiarise the clinician with the materials and methods through a comprehensive installation process.

Ultra Suction works on a simple mechanical principle: Suction. Two tiny one-way valves, embedded into the lingual or palatal aspect of the denture base, draw air from beneath the denture via two channels, collectively open to a retention chamber (Fig A).

As he wearer bites firmly, the air trapped between the mucosa and the denture is expelled through the valves. Under negative atmospheric pressure, the diaphragms seal off the valve inlets. The pressure difference, the lower pressure beneath the denture exerts a pull and draws the denture closer to the borders. The result is a better fit to the tissue and an improved resistance to dislodging forces (Fig B).

The documented dental literature teaches us that the supporting soft tissue under a well crafted maxillary complete denture is subjected to -80mmHg of negative atmospheric pressure. This is the suction level experienced by upper denture wearers. Ultra Suction valves have been developed to generate the same negative force when applied to the mandibular dentures or palatless maxillary dentures.

The system is commercialised as a full kit with illustrated mounting instructions. The components may be used for upper or lower dentures, on completely new dentures or fitted on existing dentures during the rebase/reline pro-
System Components
The spacer bar is used to create a retention chamber. Made of malleable metal, the bar is designed to sit intimately against the ridge. It can be easily bent, burnished and adapted to almost any alveolar ridge. (Fig D).

Valves
Two one way valves designed to expel the air from beneath the dentures. The central hole in the valve body is described as the inlet, and the valve cover as the exhaust (Fig F).

Processing Caps
As their name suggests the caps are fitted onto the valve bodies before the instillation procedure. Their role is to protect the valves. They are removed only after the polishing stage (Figs G and H).

Diaphragms
Two diaphragms and two spares come with the kit. These tiny plastic discs seal the inlet under negative atmospheric pressure and release the pressure under resting conditions, at the rate of 10mmHg per 15 seconds (Fig I).

The service key has two extremities. The upper part is used to grip, close & open both the valve covers and the processing caps. The lower part is a slightly larger replica of the valve and may be used as a gauge for depth and diameter (Fig J).
Ultra Suction Technique

The following sequences of images display us through the instillation process starting with two light body vinyl polysiloxane impressions loaded on special trays. In Figs 1 and 2, the impressions were boxed with particular attention to preserving accurate borders and to encompass the tuberosity protuberances.

Yellow stone was used to pour the casts from the impressions and after setting, the cast models were trimmed (Figs 3-4).

On the ridge, the location of the spacer bar was pencil designed, making sure that the bar stopped at least 1cm short of the end of the denture (Figs 5-6). The bar was stabilised using two or three small drops of cyanoacrylate and any under cuts were blocked-out (Fig 7). Cold cure acrylic poured in (Fig 8).

Hard base plates were prepared on top of the spacer bars (Figs 9-10), followed by bite blocks (Fig 11). After bite registration, the casts were mounted on an articulator (Fig 12) and teeth set-up for try-in was carried out (Figs 15-16).

In this case study the Agar flasking technique and cold cure acrylic was used. However, all other flasking and packing techniques are acceptable. Each model was packed in a two part flask (Figs 17-18). The spacer bar remained on the model and any under cuts were blocked-out (Fig 17). Cold cure acrylic poured in (Fig 18).

After polymerisation and de-flasking, the bars were removed from the dentures by digging prudently to prevent damage to the walls of the retention chamber (Fig 19-22).

The cavities for the valves were prepared with a round bur (Fig 23) intermittently using the gauge side of the service key for guidance ie. depth and diameter (Figs 27-28).

Processing caps were then placed in the valves to protect the core from being filled with self cure acrylic and then tried in (Figs 29a-30).

The valves were installed with cold cure acrylic (Figs 31-32). Soft rubber cylinder points were used to remove excess material and to polish around the valves (Fig 33). The dentures were given a final sheen (Fig 34).

At the chosen lingual site, the location of the valves was drawn with a felt marker between first and second premolar, with the centre of the valve preferably 1-1.5mm above the highest point of the retention chamber (Figs 24-25).

The cavities for the valves were prepared with a round bur (Fig 26) intermittently using the gauge side of the service key for guidance ie. depth and diameter (Figs 27-28).

Processing caps were then placed in the valves to protect the core from being filled with self cure acrylic and then tried in (Figs 29a-30).

The cavities for the valves were prepared with a round bur (Fig 23) intermittently using the gauge side of the service key for guidance ie. depth and diameter (Figs 27-28).

After polymerisation and de-flasking, the bars were removed from the dentures by digging prudently to prevent damage to the walls of the retention chamber (Fig 19-22).

The dentures were then trimmed and polished (Fig 25). It should be noted that if the valves are mounted before polishing the dentures, there is a high risk of ending up with protruding valve covers, which is not a favourable outcome in terms of patient comfort.

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around the retention chamber and the air channels were thoroughly cleaned (Fig 46).

The valve covers were opened over a receptacle of water to avoid losing the components. The valves were cleaned and the diaphragms replaced. Patients were instructed to clean their dentures and the valves on a daily basis. Patients who had manual dexterity were given the service key, together with spare diaphragms and were instructed to perform routine maintenance in between the biannual visits (Figs 47-51).

Discussion

Ultra Suction system appears to increase considerably the retention of complete dentures in both clinical observations and statistical findings. Their retentive capacity is superior to that of conventional dentures. The decrease in the rate of applied negative force by 10mmHg per 15 seconds, attributed to the design of the diaphragms, suggests that we may have a more tissue friendly denture than we first thought. It is well known that the supporting tissue is subject to -80mmHg under conventional maxillary dentures, which caused an increase in epithelial width in the palate and attached gingival, and a decrease in the epithelial width in the alveolar mucosa in most, if not all, complete denture wearers. The response is directly related to the functional demands of the tissue. In view of this documented evidence, it would be responsible to conclude that Ultra Suction’s negative force is less invasive that that of conventional dentures.

Introducing the Laser-Lok® 3.0 implant

Laser-Lok 3.0 is the first 3mm implant that incorporates Laser-Lok technology to create a biologic seal and maintain crestal bone on the implant collar. Designed specifically for limited spaces in the aesthetic zone, the Laser-Lok 3.0 comes with a broad array of prosthetic options making it the perfect choice for high profile cases.

- Two-piece 3mm design offers restorative flexibility in narrow spaces
- Implant design is more than 20% stronger than competitor implant
- 3mm threadform shown to be effective when immediately loaded
- Laser-Lok microchannels create a physical connective tissue attachment (unlike Sharpey fibers)

References

As dentistry continues to evolve, new technologies and materials are continually being offered to the dental profession. Throughout the years, restorative trends and techniques have come and gone. Some material developments have transformed the face of aesthetic dentistry, while other initial concepts have phased out and died. Today all-ceramic restorations continue to grow in the area of restorative dentistry, from pressed ceramic techniques and materials to the growing use of zirconia, and new materials that can be created from CAD/CAM technology. This article will explore new uses for the all-ceramic material, known as lithium disilicate, and the use of a digital format to design and process this material in new and exciting ways. An overview of the material and unique clinical procedures will be presented.

Introduction
Embracing proven alternative solutions and transforming traditional methods can be challenging to dental restorative teams facing increasing patient demands while being tasked with delivering high-strength restorative options without compromising the aesthetic outcomes. Traditionally, dental professionals have used a high-strength core material made of either a cast metal framework or an oxide-based ceramic (such as zirconia or alumina). This approach has two disadvantages. Compared with glass-ceramic materials, the substructure material has high value and increased opacity but may not be aesthetically pleasing. This is especially an issue in conservative tooth preparations when the core material will be close to the restoration’s exterior surface.

The other disadvantage is that although the high-strength material has great mechanical properties, the layering ceramic with which it is veneered exhibits a much lower flexural strength and fracture toughness. The zirconia core (with a 900 to 1,000 MPa flexural strength) is less than half of the cross-sectional width of a restoration; it must be completed with a veneering material with a flexural strength in the range of 80 to 110 MPa (depending on delivery method). The variable substantially because of the cleanliness of the bond surface, furnace calibration, user experience and other issues.

In today’s industry, monolithic glass-ceramic structures can provide exceptional aesthetics without requiring a veneering ceramic. Greater structural integrity can be achieved by eliminating the veneered ceramic and its requisite bond interface. This has been resolved through the development of highly aesthetic lithium-disilicate glass-ceramic materials.

The 70 per cent crystal phase of this unique glass-ceramic material refracts light very naturally, while also providing improved flexural strength (360 to 400 MPa). This gives more indications for use and the ability to place tooth restorations, and adhesive bonding techniques are needed for load sharing with the underlying tooth. This has been resolved through the development of highly aesthetic lithium-disilicate glass-ceramic materials.

The 70 per cent crystal phase of this unique glass-ceramic material refracts light very naturally, while also providing improved flexural strength (360 to 400 MPa). This gives more indications for use and the ability to place restorations using traditional cementation techniques, while also having strength and aesthetics.

Lithium disilicate, the restorative material of multiple options
Lee Culp and Prof Edward McLaren
With a monolithic technique (Figs 1 & 2), most restorations built from lithium disilicate materials can be completely fabricated. This approach provides high strength and aesthetics but requires surface colourants for the final shade. When in-depth colour effects are needed, a partial layering technique may be employed. Although no longer a purely monolithic structure (Figs 3 & 4) because the restoration maintains a large volume of the core material, the resulting restoration should reasonably maintain its high strength. However, no evidence supports this.

**Aesthetic options**

If covering or masking underlying tooth structure is part of the treatment plan, the restorative team can imagine doing so in an aesthetic way. The ceramist can make that vision a reality with IPS e.max (Ivoclar Vivadent) by using a very high opacity ingot. Ingot opacities available for IPS e.max include high opacity (HO), medium opacity (MO), low translucency (LT) and high translucency (HT). The MO ingot can be used as an anatomic framework material if restorations must be fully layered. LT ingot can be employed with stain and glaze methods or hybrid layering techniques, which have been used for years with IPS Empress Aesthetic (Ivoclar Vivadent). The HT ingot is meant for stain and glaze techniques.

Choosing one of these four different aesthetic options depends on the preparation and the technique to be used in order to match the adjacent dentition or restorations. In addition, the laboratory can select the processing choice that is appropriate for the selected restoration. IPS e.max includes press and CAD/CAM options because lithium disilicate can be pressed from ingot form or milled from a digitilized restoration. IPS e.max also provides options for cementation. Conventional self-etching primer cement is ideal for full crowns. For partial and veneer preparations for which adhesive protocol will be used, full light-cure bonding is preferred.

**Case study**

A 42-year-old female presented with discoloured teeth that had been repaired with resin-cement techniques, IPS e.max (Ivoclar Vivadent) by using a very high opacity ingot. Ingot opacities available for IPS e.max include high opacity (HO), medium opacity (MO), low translucency (LT) and high translucency (HT). The MO ingot can be used as an anatomic framework material if restorations must be fully layered. LT ingot can be employed with stain and glaze methods or hybrid layering techniques, which have been used for years with IPS Empress Aesthetic (Ivoclar Vivadent). The HT ingot is meant for stain and glaze techniques.

Choosing one of these four different aesthetic options depends on the preparation and the technique to be used in order to match the adjacent dentition or restorations. In addition, the laboratory can select the processing choice that is appropriate for the selected restoration. IPS e.max includes press and CAD/CAM options because lithium disilicate can be pressed from ingot form or milled from a block form. If the CAD/CAM option is used, the technician will design the restoration digitally rather than perform a full wax-up and invest/press.

**Preparation options**

If LT or HT ingots will be needed, then dentists can have flexibility with their preparations because of the translucent margins. This is the situation with partial preparations (for example inlays, onlays and veneers)—the margins can be placed wherever clinically proper. IPS e.max’s translucency enables dentists to place the margins virtually anywhere on the restoration, blending seamlessly with the natural dentition.

Dentists can use a traditional preparation of 1.0 to 1.5 mm reduction (for example a full-crown preparation) if they need more opaque materials (for example HO and MO). Because the resulting restoration will have a slight opacity, the margins will be equi-gingival or slightly sub-gingival. In either case, the material will be fully layered to create the final restoration. IPS e.max provides the choice of using traditional or creative preparation designs.

**Cementation options**

Because lithium disilicate can be fully light-cure bonded or cemented using a self-etching primer with conventional resin-cement techniques, IPS e.max also provides options for cementation. Conventional self-etching primer cement is ideal for full crowns. For partial and veneer preparations for which adhesive protocol will be used, full light-cure bonding is preferred.

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The improved sharpness of EVEREDGE TECHNOLOGY instruments does not come from a superficial coating – the long-lasting wear is present throughout the entire instrument tip.
The innovation of digitally designed restorations means that some of the more me-
Mechanical and labour-intensive procedures (for example waxing, investing, burn-out, casting and pressing) involved in the conventional fabrication of a restoration were essentially automated. The dentist and technician had a consistent, precise method to construct functional dental restorations.

A file is created within the design software for each patient. The operator can input the patient’s name or record number and select the appropriate tooth number(s) to be treated. Each tooth’s restoration is checked (for example full crown, veneer, inlay and onlay). Lastly, additional preferences include material choices and preferred shade. System defaults that can be set ahead of time or changed for each patient are preferred contact tightness, occlusal contact intensity and virtual die spacer, which determines the internal fit of the final restoration to the die/preparation. All this information can be entered prior to treatment or changed at any time if the actual treatment differs from what was planned.

When the images of the preparation, provisional restorations and opposing dentition are captured, the computer has all the required information for preparing the working models, preparation and opposing model. The real 3-D virtual model is then shown on the screen and can be rotated and viewed from any perspective (Fig 8). In designing the restoration, the first step must be to define the final restoration’s parameters digitally. This is achieved by employing the opposing and adjacent teeth for occlusal interproximal contact areas and, finally, the gingival margins of the preparation.

Using input and neighbouring anatomic detail as a basis, the software will place the restorations in an appropriate position—but not to the clinically ideal location. Instead, the operator relies on his or her knowledge of form and function and experience to reposition and contour the restoration. As the crown’s position and rotation are fine-tuned, the software’s automatic occlusion application will readjust each triangular ridge and cusp tip—and the restoration’s contours, contacts and marginal ridges—employing the preferences and bite-registration information. The virtual restoration adapts all parameters in relation to the new position. Instantaneously, the position and intensity of each contact point is illustrated graphically and colour-mapped, where it can easily be modified based on the operator’s and clinician’s preferences. Through a variety of virtual carving and waxing tools, customisation and artistry are also possible. These tools can be used to adjust occlusal anatomy, preferences and contours, reflecting actual laboratory methods. Each step in the process is updated on the screen; therefore, the effect of any changes is immediately apparent. For this case, three files were loaded into the computer software for restoration design. Scans of the preparations, provisional restorations and opposing dentition were joined to form a composite file that represented the patient’s oral situation accurately (Fig 9). Once the final virtual restorations have been completely designed (Fig 10), the milling chamber with the predetermined shade, opacity and size of the IPS e.max block is loaded, an on-screen button is pressed, and an exact replica of the design is produced in ceramic in a short time.

Glass-ceramics are categorised according to their:

### However, as restorative dentistry shifts further into the digital era, clinicians must change their perceptions and definitions of the dental laboratory

‘...’
chemical composition and/or application. The IPS e.max lithium disilicate is composed of quartz, lithium disilicate, phosphorus oxide, alumina, potassium oxide, and other components. These powders are combined to produce a glass melt, which is poured into a steel mould, where it cools until it reaches a specific temperature at which no deformation occurs. This method results in minimal defects and improved quality control (owing to the translucency of the glass). The blocks or ingots are generated in one batch, based on the shade and size of the materials. Owing to the low thermal expansion that results during manufacture, a highly thermal, shock-resistant glass-ceramic is produced.

Next, the glass ingots or blocks are processed using CAD/CAM-milling procedures or lost-wax hot-pressing techniques (IPS e.max Press; Fig 11). The IPS e.max CAD blue block is based on two-stage crystallisation: a controlled double nucleation process, in which the first step includes the precipitation of lithium-metasilicate crystals. Depending on the quantity of col- ou rant added, the resulting glass-ceramic demonstrates a blue colour. This ceramic has superior processing properties for milling. After the milling process, a second heat-treating process is performed in a porcelain furnace at approximately 850°C, at which temperature the metasilicate is dissolved and the lithium disilicate crystallises. This results in a fine-grain glass-ceramic with 70 per cent crystal- tal volume incorporated into a glass matrix.

With two crystal types and two microstructures during processing, the IPS e.max CAD material demonstrates distinctive properties during each phase. The intermediate lithium-metasilicate crys- tal structure promotes easy milling, without excessive bar wear, while maintaining high tolerances and marginal integrity. In the blue stage, the glass-ceramic contains approximately 40 per cent volume lithium-metasilicate crystals that are approximately 0.5μm. The final-stage microstructure of lithium disilicate gives the restoration its superior mechanical and aesthetic qualities. In this stage, the glass-ceramic contains approximately 70 per cent volume lithium-disilicate crystals that are approximately 1.5 μm (Figs 12-15).

The laboratory process Once designed and milled, the IPS e.max ceramic resto- rations are then prepared for final aesthetic adjustments. After the milling stage has been removed, the technician defines surface texture and occlusal anatomy using dia- mond and carbide burs, carefully avoiding any alteration to the perfected occlusal and interproximal contacts. Afterwards, restorations are rinsed to remove surface debris and dried. Then, the milled blue restorations are placed in a conventional ceramic furnace for the crystallisation process. These restorations were digitally designed with an incisal cut-back design that will al- low a minimal application of translucent ceramics to mimic the incisal effects found in nature. Contoured to final anatomic shape, the restora- tions are further aesthetically improved by subtle colouring and glazing.

Restoration placement Next, five per cent hydrofluoric acid (IPS Ceramic Etching Gel, Ivoclar Vivadent) was applied for 50 seconds onto the internal surfaces of the glazed restorations. Then they were rinsed and dried. This was followed by a silane coupling agent (Monobond-S, Ivoclar Vivadent), which was also placed for a minute onto the internal surfaces, and then air-dried. For the final ce- mentation, Variolink Veneer (Ivoclar Vivadent) was used. After excess cement had been removed, final light-curing was done. The occlusal con- tacts were then reviewed and excursive pathway freedom was confirmed. Owing to the correct capture and alignment of the bite-registration information, few adjustments were required.

Conclusion IPS e.max is about restorative aesthetics, Dentists and techni- cians now have a material with which they can do ante- rior or posterior restorations. With four different opacities or translucencies available, a variety of creative aesthetic options can be accomplished in a restoration. Dentists and their laboratory ceramists now have the opportunity to be more creative for their pa- tients (Figs 16-18).

Editorial note: A complete list of references is available from the publisher.

Fig. 11 IPS e.max milling blocks, shown in blue stage
Fig. 12 IPS e.max milling blocks, shown in blue stage
Fig. 13 IPS e.max full contour posterior restoration, shown in blue stage
Fig. 14 IPS e.max cut-back anterior restoration, shown in blue stage
Fig. 15 IPS e.max cut-back anterior restoration, shown in blue stage
Fig. 16–18 Maxillary anterior section restored with CAD/CAM-designed and -milled e.max restorations, using a micro-layering technique for aesthetics