

SHOWCASE TRIBUNE

The leading newspaper for BDTA Showcase - Brought to you by Dental Tribune UK

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News in Brief

That's one expensive tooth!

John Lennon's tooth is being put up for auction in November and is expected to make £10,000. According to a report, John had given the tooth to his former housekeeper, Dot Jarlett, after he pulled it out in the kitchen of his Weybridge property. Dot's son Barry Jarlett was quoted in the report saying: "He was in the kitchen and he had this tooth which he had wrapped in a piece of paper. "He said: 'Dot will you dispose of this' and then he said: 'Or, as your daughter's a Beatles fan, you can give to her as a souvenir'. "It is something that we felt was very personal and my mum actually gave it to my sister who has kept it safe." The tooth, which will be auctioned in Stockport on 5 November, comes with an affidavit signed by Mrs Jarlett. This isn't the first item of John's that has been auctioned; Mrs Jarlett previously sold items including the jacket worn by John Lennon on the Rubber Soul album. "He was very generous to my mother," Mr Jarlett said. "He treated her like family because he didn't really have a very big family and he really looked after my mum. He used to call her Aunty Dot." According to Karen Fairweather, from Omega Auctions, the tooth is the weirdest yet "most wonderful" item that has been put up for sale at the auction house. As a result, it has been difficult to put a price on the tooth. "We are expecting it to achieve at least £10,000 but it is not unknown for these items as rare as this to reach six figures." Karen said.



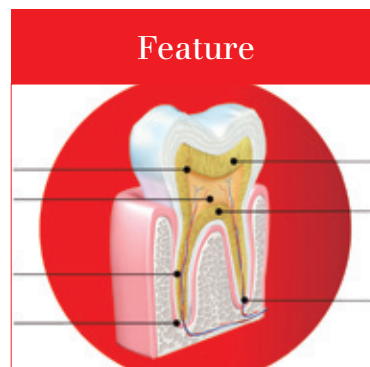
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Showcase : 'One Stop Shop'

Yesterday was the first day of this year's Showcase event, and was a day filled with new launches and fresh ideas.

Around 370 stands are in attendance from every corner of the dental profession, as visitors were spoilt for choice about where to go to get the best deals.

New solutions were the order of the day. One such example was Carestream, who had no less than five new products on show on Stand H07. These included:

The global launch of the CS7600 X-ray machine with intelligent plates. This new system is able to have the patient's info transferred onto the individual plate, reducing error and allow-

ing for the images to be transmitted to wherever they need to be, not just straight back to the surgery for processing.

The CS9300 CT Scanner and CS1600 I-O Camera. The CS9300 device has been designed with more than just dentistry in mind, as it is able to capture from the smallest detail such as a single tooth to a large field image such as those needed in ENT (Ear, Nose and Throat) Departments. The CS1600 includes a caries detection mode as one of its functions.

E-forms and Patient Surveys. Aiming to help practices comply with CQC and be a paperless office, these systems include the forms necessary for patient consent and feedback.

Other companies launching innovations included:

Admor (Stand C05): Admor has rebranded, putting the 'dedicated to dentist' message into everything they do. One such innovation is the release of magnetic signs for the practice, thereby making it easier when practitioners move or share surgeries to keep signage clear for patients (and staff). Also launched is the Slimline cabinetry range, Italian designed and produced to add value.

ADAM (Stand B13): Formerly known as the British Dental Practice Managers' Association (BDPMA), ADAM has widened its focus to help support those team members who are involved in the management of the practice.

money4dentists (Stand R03): launching a new arm of their services, careers-4dentists.

Spry Xylitor (Stand Y09): promoting the clinical benefits of using Xylitol as an alternative to sugar, Spry promoted its range of products including lozenges, gum and granules.

This year's event is seeing an upturn in the use of social media at the event, with many stands and even the BDTA's own guide to the show sporting QR codes and a deluge of tweets discussing the event. A new phenomenon for dental exhibitions, the 'Tweet-up' is happening twice each day of the event, allowing those who indulge in Twitter to meet face-to-face. [DT](#)

model shown Diplomat DC320



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Stand awards at showcase 2011

The BDTA is delighted to announce that the Showcase Stand Awards will return this year at Dental Showcase and will be judged by Paula Ripoll from the Association of Event Organisers.

Exhibition stands will be judged on a number of factors, including presentation, professionalism,

stand layout and appearance, staffing, and the range of products/information on display.

There will be three eventual winners, covering the small, medium and large stand categories, and each will win a full-page ad in their choice of dental magazine.

Tony Reed, Executive

Director at the BDTA, said, "The Showcase Stand Awards provide an opportunity for the BDTA to recognise the significant time and effort that exhibitors put into their stands at Showcase and we are especially pleased to have exhibition expert Paula Ripoll to select this year's winners." **DT**

BADN AGM to be held at Dental Showcase 2011



also be a buffet lunch, sponsored by Phillips Sonicare.

"I am of course very disappointed that Conference cannot go ahead in my home town of Glasgow," said Nicola "but appreciate that we are in very difficult times financially. I should like to thank both the BDTA and Phillips Sonicare for their generous sponsorship of the Presidential

Due to the current economic climate the BADN has decided not to hold the 2011 National Dental Nursing Conference in Glasgow.

However, the BDTA is delighted to announce that the Presidential Inauguration of incoming President Nicola Docherty, and the BADN AGM will now be held on Saturday 22 October at Dental Showcase. There will

Inauguration and the AGM, and look forward to speaking with as many dental nurses as possible at Showcase."

BADN will be reviewing their Conference strategy later this year and hope to run an updated, more compact 2012 Conference.

DT



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I Furgang et al, J Dent Res. 2011; 90 (Spec Issue): Abstract 3073.

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Smile-on Launch!

With the buzz of Showcase 2011 filling the atmosphere at the NEC Birmingham, Smile-on launched their new website and mLearning revolution to an excited crowd that gathered at stand W08.

Those who attended were welcomed with a champagne reception and buffet lunch as CEO of Smile-on Noam Tamir introduced the crowd to the newly found presence of mLearning and Smile-on's role in bringing it to dental professionals.

Progressing on from the established form of eLearning, which educational institutions have become accustomed too, mlearning, as Noam explained, is a learning on the go, wherever and whenever.

Chief Dental Officer, Barry Cockcroft, was there to officially open the launch. In a speech to the crowd that gathered at the stand, Barry congratulated Smile-on's hard work and effort that they have brought to the dental educational environment.

The launch was then handed over to Operations Officer at Smile-on, Patrick Cannon, who provided a demonstration of the new website. Giving a brief history of the phases of the previous website designs, the new website is fresh and friendly, providing everything that dental professionals need to fulfil their CPD requirements. With features such as My Account, users are not only able to keep track

of their CPD hours but the website cleverly provides a platform for dental professionals to complete their CPD requirements on the go.

Of course the launch couldn't be complete without a demonstration of Smile-on's new App, Smile-on News. As Pat explained, the Smile-on app is a great way to keep up to date with all the latest news and developments in the dental world. Not only this, but the app will also have a great selection of dental related articles, from social marketing to clinical cases!

The website and the launch of some new programmes also generated a great deal of interest from those who attended, especially dental nurses and practice managers, who were greatly interested in Smile-on's CQCm programme.

However, one of the highlights of the event was Smile-on's very own fruit machine, the One Armed Bandit! With the top prize being a luxury holiday worth £3000 the response was great and people were queuing up to have a go! Within the first few attempts people were winning watches and 50 per cent discounts on a range of Smile-on products, but at the time of writing there's still a chance to win the iPad and holiday!

The competition will be running for the remainder of Showcase so make sure you check out stand W08 for more information and a chance to win a prize! [BT](#)



A bright idea!

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alegra

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See the Alegra LED G range on Stand G07, BDTA Dental Showcase 2011.

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BDTA Essentials Let's see what's new in dentistry!

With more than 350 companies appearing at this event, Showcase 2011 presents yet another superb opportunity to view the latest innovations in the world of dentistry under one roof.

The BDTA have announced that not only

will there be complimentary one hour seminars, covering regulatory issues, but there will also be free feature lectures, informing visitors of the latest dental innovations. (See tables below). And after its massive popularity last year Dental Lab @ Showcase is back again! Once again the Pavilion will be a focal point for DCPs, spanning 60 square

metres and hosting a hospitality and lounge area, encouraging interaction and providing a practical example of working together for the benefit of the industry.

This year the BDTA were delighted to announce that the following professional dental association's sharing the pavilion at Showcase 2011:

- BADN
- BACDT
- DPA
- DLA
- DTA
- BDPMA
- BADT
- BSDHT
- BACD
- BDTA

Food & Drink

When you've finished visiting Stand W08 for all your CPD and post-graduate training needs, as well as meeting all the team from Dental Tribune, there's a vast selection of food places to be found!

The NEC has a great range of places to eat and relax, from bars too easy to eat market places, operated by the NEC's sister company Amadeus, there is something for everyone.

First off is the food&bar, which offers a modern self-service restaurant with a choice of sandwiches, salads and hot and cold meals away from the buzz of the show. Then there is the marketplace style Foodmarket, which offers all the ingredients to find and eat tasty food quickly and without fuss.

Serving what has been classed as "the highest standard of tasty sandwiches, salads, snacks and drinks" is Foodexpress and there's also Foodfeature, which changes concepts every week, serving anything from noodles to jacket potatoes!

For an ideal quick drink and a chat, the Foodcafébar is an alternative choice and can

found in halls 9 to 12 offering yet another place to grab a coffee, snack or even a glass of wine.

For those desiring a relaxing table service restaurant The Exhibitionist is the place to go, offering a seasonal menu, guests can sit back and enjoy quality food in stylish surroundings.

However there is also The Food Bank, a self-service restaurant which offers an extensive choice of hot and cold meals.

For those looking for a quality sandwich, look no further than The Damn Fine Sandwich Company; they serve a range of unusual breads with hot or cold fillings and their salads sounds mighty tasty too, with favourites including Red Thai chicken salad and Buffalo Mozzarella with chargrilled vegetables.

For a bit of live cooking head to Jimmy Spices, which offers Indian, Chinese Mexican and Italian cuisine (it's also open for a tasty full English breakfast and coffee too!)

On the subject of coffee the NEC host Starbucks and there's even a Subway. For those looking for a free house you can find a JD Wetherspoon, offering a mix of traditional British meals and international dishes and a selection of alcoholic and soft drinks.

If you're looking for a food place using free range, locally sourced and organic ingredients (wherever possible) the Pasty Presto is the place to go. [DT](#)

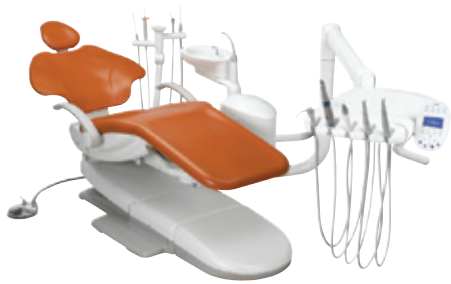

Stand L01

DENTAL SHOW DISCOUNT VOUCHERS

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‘Instrument Amnesty’ returns to Showcase

Do you have any hand instruments you no longer use?

In order to address the need for dental instruments in developing countries, the BDTA is pleased to announce that the instrument amnesty has returned to Showcase 2011. The BDTA is link-

ing up with Dentaïd, the dental charity striving to improve the oral health of disadvantaged communities around the world, to encourage the dental team to donate their unwanted hand instruments at this year’s exhibition.

Shortage of dentists and equipment in developing countries

There is a severe shortage of dentists in developing countries and the ones that are working are drastically under-resourced. The level of care they are qualified to offer is significantly higher than their equipment allows; no light, no drill, no suction, difficult working conditions and very importantly, only a limited



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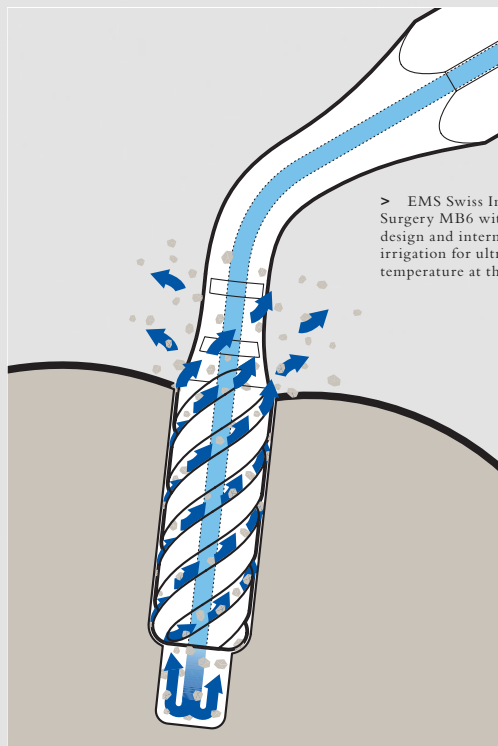
EMS Swiss Instruments Surgery MB4, MB5 and MB6 are diamond-coated cylindrical instruments for secondary surgical preparation (MB4, MB5) and final osteotomy (MB6). A spiral design combined with innovative dual cooling makes these instruments unique in implant dentistry.

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> EMS Swiss Instrument Surgery MB6 with unique spiral design and internal instrument irrigation for ultralow temperature at the operative site

(membranes, nerves, blood vessels, etc.). An optimum view of the operative site and minimal bleeding thanks to cavitation (hemostatic effect!) further enhance efficacy.

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range of instruments.

Recipient dentists are always delighted with the equipment provided but some have been known to literally weep with joy when they have opened the box of instruments provided with the surgery, highlighting just how important these hand tools really are for day-to-day dental care.

Andy Jong, Dentaïd’s CEO commented: “Since developing the portable dental chair and portable instrument kit, Dentaïd has experienced a big surge in orders from charitable projects and hospitals with community oral health programmes. This year’s instrument amnesty is a great way for the dental team to help us meet the demand and reach many more remote places with improved oral health care.”

It is likely that there

is a huge selection of instruments sitting in the bottom of cupboards in dental practices across the country not being used.

The highly successful instrument amnesty last took place at Showcase in 2005 where more than 10,000 instruments were collected. It returns to this year’s event as a way to once again replenish the diminishing stocks and enable Dentaïd to continue its important work.

Don’t forget to bring your instruments with you to BDTA Dental Showcase 2011!

Please ensure your instruments have been properly sterilised and then donate, along with details of your practice, to the Dentaïd stand during the exhibition.

For further information on Dentaïd, visit www.dentaïd.org. DT

new

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Visual representation of dentine cross-section and dynamic reparative layer



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References: 1. Burwell A et al. Journal of Clinical Dentistry 2010; 21(Special Issue): 66-71. 2. LaTorre G & Greenspan DC. Journal of Clinical Dentistry 2010; 21 (Special Issue): 72-76. 3. Efflandt SE et al. Journal of Materials Science: Materials in Medicine 2002; 13(6):557-565. 4. Clark AE et al. Journal of Dental Research 2002; 81 (Special Issue A): 2182. 5. GlaxoSmithKline data on file Earl J, 2010b. 6. Du MQ et al. American Journal of Dentistry 2008; 21(4): 210-214. 7. Pradeep AR & Sharma A. Journal of Periodontology 2010; 81(8):1167-1173. 8. Salian S et al. Journal of Clinical Dentistry 2010; 21 (Special Issue): 82-87.

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A new concept for dentin replacement in posterior composite restorations

In stress-bearing posterior applications, composite restoratives have been used as an esthetic alternative to metallic restorations for more than two decades, and their popularity has steadily increased, especially in the last few years. The first clinical data gathered for posterior restorations in the early 1980s, particularly with regard to mechanical properties, were not encouraging. The abrasion resistance of those early composites was so low that fillings lost their contours. Fractures, marginal breakdown and marginal leakage caused by polymerization shrinkage also limited the durability of composite restorations. These shortcomings have been considerably reduced by recent improvements of both composites and adhesive systems 6. However, the negative effects of polymerization shrinkage – such as insufficient marginal integrity, unsatisfactory adhesion to cavity walls, or cusp deflections – continue to be the greatest problem of composite restoratives. The stress developed during polymerization results from the shrinkage effects occurring when the monomers react to form a polymer. Therefore, limiting this polymerization stress without sacrificing the high degree of conversion (which is essential for good mechanical properties of the material) seems to be a promising element in synergistic approaches to the problems associated with shrinkage.

In light-cured composites, the organic phase of

the uncured composite paste contains free, uncombined methacrylate monomers. Upon initiation of light curing, these monomers combine, in a free radical process, to form larger oligomers and finally the long-chain, cross-linked, cured polymer. Since the distances between the individual components of the polymer formed are shorter than between the individual monomers before this reaction, polymerization leads to a net loss of volume. This effect is referred to as polymerization shrinkage. As long as the monomers are able to move freely, because they are not yet part of a network, there is only little or no development of polymerization stress. However, as more monomers react, the developing polymer network begins to become rigid, in part due to increasing covalent bond formation (cross-linking) between adjacent polymer chains. As the mobility of the monomers essentially ceases, any further shrinkage of the system results in an increase in polymerization stress. This stress is not only trapped in the composite itself, but also exerts forces on any interface to which the composite is bonded by means of adhesive pretreatment.

The transfer of this polymerization stress is the cause of numerous clinical problems. In a well-bonded composite restoration, the stress resulting from polymerization shrinkage is transferred through the interface with the tooth structure and may cause deformation. This tooth

deformation may result in enamel fracture, cuspal movement and cracked cusps. An influence of cavity design on the transfer of polymerization stress is documented in the dental literature. The term “C-Factor” describes this influence; it relates the number of composite restoration surfaces bonded to the tooth by an adhesive to the number of unbonded surfaces. The higher the C-Factor, the greater the stress-related forces acting on the cavity walls. It is apparent that Class I and II cavities have the highest C-Factors, making these restoration types most susceptible to the effects of polymerization stress.

In a less well-bonded restoration, polymerization stress may initiate debonding of the composite from the tooth (adhesive failure) if the forces developed exceed the bond strength. The resulting gap between the restoration and the cavity walls may produce post-operative sensitivity, micro-leakage, and/or secondary caries. Further, internal stress of the composite has the potential to initiate micro-cracking within the restorative. If the bonding to the cavity walls is strong enough to avoid gap formation during hardening, the stress concentrated inside the composite can still produce micro-cracks. As a result of this phenomenon, a restored tooth remains under stress even when there is no functional loading. This implies a greater risk of failure during tooth function. Therefore, controlling the amount of polymerization stress due to shrinkage

may in all probability improve the clinical success of composite systems.

SDR Smart Dentin Replacement Composite

In traditional methacrylate-based composites, visible light curing proceeds rapidly, especially directly after photo-initiation. This rapid polymerization leads to a rapid increase in polymerization stress. The polymer chains cross-link at a high rate. Thus, the developing polymer undergoes a significant amount of shrinkage, and the network is unable to relieve the resulting stress due to its adhesion to the cavity walls. This explains why, despite efforts to reduce polymerization shrinkage, the effects of the resulting stress are evident across a wide range of composites with sometimes very different shrinkage values. If trapped stress caused by polymerization shrinkage is not dissipated, adverse effects will always be present.

In the traditional, methacrylate-based composite systems widely used today, the most common approach to reducing the effects of polymerization stress is to incorporate inorganic fillers into the polymerizable resin matrix, so as to reduce shrinkage by reducing the resin portion of the composite. Of course, there is a practical limit to the amount of fillers that can be added without affecting the clinical usability of the material. Although the polymerization shrinkage is greatly reduced in these highly filled systems, there is still a dramatic increase

in the stiffness or elasticity modulus due to the inclusion of fillers, keeping the stress high.

Alternatively, one could develop a composite with a lower overall modulus to reduce the effects of polymerization stress. Unfortunately, in the commonly available methacrylate composites, a low final modulus results in inferior mechanical properties and is therefore not a practical solution. Another approach would be to replace the methacrylate chemistry with a different resin chemistry. But this would also require altering the materials that are used in conjunction with the new composite system (e.g. adhesives).

The low-viscosity, flowable composite “SDR Smart Dentin Replacement” (DENTSPLY DENTREY; Konstanz, Germany) is based on the traditional methacrylate chemistry. However, it contains a UDMA-based polymerization modulator, designed to permit internal reduction of the stress caused by polymerization shrinkage by means of a slower modulus development in the curing phase without any decrease in the rate of polymerization or degree of conversion 9. The functional groups of this methacrylate allow it to react with other typical methacrylate systems, which are currently used in almost all composites. Thus, traditional methacrylate-based etch&rinse or self-etch adhesives react with SDR in

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