Researchers at the Dental Institute at King’s College London say they’re a step closer to growing human teeth in the lab using cells from the individual who would ultimately receive the tooth as a natural implant.

Led by Professor Paul Sharpe, the research team isolated adult human gingival tissue from dental patients at the institute, grew more of the tissue in the lab, and then combined the tissue with mesenchyme (tooth-forming) cells from mice. The combination of cells were transplanted into mice renal tissue, where they grew into hybrid human/mouse teeth that contained dentine and enamel — and formed viable roots.

The root formation is seen as a key breakthrough, because bioengineered teeth with natural root structure could eliminate one of the challenges sometimes seen with tooth-implant technology to date: a risk of bone loss in the area of the jaw that anchors an artificial implant. Such bone loss has been attributed to friction that occurs when eating or because of other jaw movement.

‘Bioteeth’ a step closer to becoming clinical reality

Scientists ‘build’ teeth that have dentine, enamel, viable roots

Nonmembers can sample CDA Presents

Discounts available to access California Dental Association event

Nonmembers can experience one of the biggest benefits of California Dental Association membership by attending CDA Presents in Anaheim for $75. Nonmembers who take advantage of the offer save $815 and gain access to world-class speakers, numerous C.E. opportunities and an extensive trade show. Registration materials must be picked up on site at a membership presentation held in the registration area. Those who already took advantage of this promotion or who had a CDA membership in 2011 or 2012 are not eligible. Additionally, if a nonmember isn’t able to attend one of the membership presentations, registration cost is $890.

Details on the April 11–13 event can be found at www.cdapresents.com. Nonmembers also have the opportunity to register for a $175 one-day pass for exclusive Saturday, April 13, entry to the trade show floor featuring products and services from close to 600 companies.

See page A7

See ANAHEIM, page A7

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Implant Tribune
IN BERN: ITI HOSTS CONSensus conference
• page B1

Endo Tribune
IN HONOLULU: AAE PLANS ANNUAL SESSION
• page C1

Cosmetic Tribune
MAKE EMERGENCY COSMETIC CASES ROUTINE
• page D1

Hygiene Tribune
TREATING SEVERELY MENTALLY ILL PATIENTS
• page E1

NEWS
A1–A3
• Dental analysis used to help identify Civil-War-era remains recovered from USS Monitor

CLINICAL
A4–A5
• American Academy of Pediatric Dentistry Annual Scientific Session packed with networking opportunities in Orlando
• Journées dentaires internationales du Québec courses filling fast
• Five-day hands-on implant course presented in Jamaica
• New technology pavilions added to exhibit floor for 2013 Greater New York Dental Meeting

MEETINGS
A6–A12

INDUSTRY NEWS
A13–A17
• BIOLASE hands-on showcase includes all-new laser and imaging systems
• Sesame Institute: 3 reasons your website should be optimized for mobile device users
• Expert Dental CE creates two restorative, aesthetic modules
• Glidewell Laboratories: Implant position in the aesthetic zone
• Scheduling Institute: Is a blind spot costing you thousands?
Dental clues assist in effort to identify USS Monitor remains

The remains of two sailors discovered during the 2002 recovery of the gun turret of the Civil War-era ironclad ship USS Monitor were interred at Arlington National Cemetery March 8. At the time of the interment ceremony the sailors remained unidentified, but thanks in part to dental clues, researchers are closer to possibly identifying the two men by name, and perhaps ultimately even identifying them in photographs from the era.

The remains of the two sailors are the only remains to be discovered of 16 sailors lost with the Monitor sank during a storm on Dec. 31, 1862, off Cape Hatteras, N.C. The Joint POW/MIA Accounting Command (JPAC), Joint Base Pearl Harbor-Hickam, studied dental and forensic analysis on the remains in an effort to identify the two sailors who lost their lives more than 150 years ago.

JPAC members who took part in the identification process included a dentist who analyzed the teeth from the remains, with the intent to cross reference them with any dental records that they might be able to find. To date, no such records have emerged, but the sailors’ teeth have revealed other clues that brought JPAC members closer to their goal of identifying the sailors by name.

Forensic anthropologist Robert Mann, director of the Forensic Science Academy for JPAC, was assigned to do the skeletal analysis. “The Monitor sailors were really very unusual for us, water recoveries first of all are not that common for us,” said Mann. “To recover remains from the bottom of the ocean that sat there for 150 years is really phenomenal.”

“There are a lot of challenges when you are trying to identify someone, especially when you recover remains with skeletal remains. If you think about how you recognize somebody, and how we identify people, they identify them by visual examinations,” said Mann. “Look at the face or fingerprint prints, well we don’t have fingerprint prints after 150 years. We don’t have faces, we have bones and teeth.”

One of the challenges faced was the amount of available records from the Civil War-era and when the Monitor sank in 1862. “We’re talking 150 years and from the Civil War. The records are not that good and we don’t have the dental x-rays. We don’t have DNA samples from everybody missing, and family members missing, we don’t have all 16 individuals who are missing, this really is a difficult job,” explained Mann.

Due to the conditions and elements the remains were exposed to during the last 150 years, Mann and other JPAC staff members were faced with more challenges in their attempts to identify the two sailors. The first major step in identifying the remains was a desalination process, which removed the salt from the bones. The remains were also recovered in rust, coal and sediments from the ocean, all of which have to be removed before the identification process can begin. This process alone lasted several months.

Once the bones were cleaned, Mann was able to examine the remains and establish biological profiles of the two sailors. “From the bones and teeth, we examine them visually. I can tell the individuals age, their race, their sex, how tall they were, any kind of injuries they may have had during their life time, their oral health and any kind of distinguishing features they may have,” said Mann. “Those are the things that can help us identify them.”

> See MONITOR, page A3

• BIOETHICS, page A1

The goal is creating a viable root that would be integrated into the jaw as it was with the recipient’s natural tooth. There’s no need for the crown of the tooth to match the bite, because technology exists to create a man-made alternative that integrates appropriately into the lower jaw. Although it is clear that embryonic tooth primordia cells can readily form immature teeth (teeth primordia) that mimic those in the embryo. Such teeth could be transplanted as small cell “pseudotes” into the adult jaw to develop into functional teeth. It has been demonstrated that embryonic tooth primordia can develop normally in the adult mouth, so if suitable cells can be identified and combined in such a way to produce an immature tooth, there is a realistic prospect that biotech could become a clinical reality.

Subsequent studies have largely focused on the use of embryonic cells, and although it is clear that embryonic tooth primordia cells can readily form immature teeth following dissociation into single cell populations and subsequent recombination, such cell sources are considered impractical to use in a general therapy. Sharpe, an expert in craniofacial development and stem cell biology, said, “What is required is the identification of adult sources of human epithelial and mesenchymal cells that can be obtained in sufficient numbers to make biotooth formation a viable alternative to dental implants ... Epithelial cells derived from adult human gum tissue are capable of responding to embryonic tooth mesenchyme in an appropriate way to contribute to tooth crown and root formation and give rise to relevant differentiated cell types, following in vitro culture. These easily accessible epithelial cells are thus considered a realistic source for consideration in human biotooth formation. The next major challenge is to identify a way to culture adult human mesenchymal cells to be tooth-inducing, as at the moment we can only make embryonic mesenchymal cells do this.”

Sharpe’s findings were published in the Journal of Dental Research. The team’s efforts were funded by the National Institute of Health Research (NIHR) Biomedical Research Centre at Guy’s and St. Thomas’ NHS Foundation Trust and King’s College London, United Kingdom. The research report became available online in early March at jdr.sagepub.com. Categorized under “Research Reports - Biological,” the article is titled, “Adult Human Gingival Epithelial Cells as a Source for Whole-tooth Bioteeth Engineering.”

(Source: Dental Institute at King’s College London)

Tell us what you think! Do you have general comments or criticism you want to share? Is there a particular topic you would like to see articles about in Dental Tribune? Let us know! Email: feedback@dental-tribune.com. We look forward to hearing from you! If you would like to make any changes to your subscription, please email us at subscriptions@dental-tribune.com and we will be happy to include which publications you are referring to. Also, please note that subscriptions changes can take up to six weeks to process.
The biological profiles, revealed primarily through studying the development of the teeth concluded that the sailors were both white males, one 17 to 24 years old and the other in his 30s. Both sailors stood about 5-feet-7-inches tall.

Speaking in more detail about the teeth of the older sailor, Mann said researchers found “a round spot” worn into the sailor’s bite. “It’s a little semi-circle in the top [teeth] and a semi-circle in the bottom, and you put that together and what would that be? That’s a pipe-stem groove. Back in the Civil War a lot of sailors were smoking clay pipes that were very abrasive. So they would put this clay pipe between their teeth and sit there and grind on it, and after a while it acts like sandpaper and puts a groove there in their top teeth and their bottom teeth.

We have evidence in his teeth. There’s no doubt about it, this individual smoked a pipe.”

Mann created a short list of possible identities based off of the age, race and height of the sailor’s remains, and narrowed down the identities to six possibilities by comparing them to the 14 other sailors. Because of a limited number of records and lack of dental records from the Monitor, the next step in attempting to identify the fallen sailors is DNA testing. Genealogists have been able to identify possible descendants for 10 of the 16 missing sailors.

“What we’re going to hope for is we may still find [descendants] of the other missing sailors,” said Mann. “If that happens we can get DNA samples from them, then we may be able to exclude the other 15 sailors, we may end up with a match. We may end up with one or both of these sailors [identities].”

Secretary of the Navy Ray Mabus announced Feb 12 that the remains recovered from the Monitor were to be interred in Arlington National Cemetery on March 8. The date was chosen to honor Monitor’s role in the Battle of Hampton Roads 151 years ago. “The importance of recovering a fallen warrior is to let the nation know that the United States has made a commitment that once we’ve put someone it harm’s way, and they are either missing or killed in action, that we have a resolve to go back and return them back to their families,” said McKay.

McKay also expressed the importance of JPAC’s role to future service members, and their families and to those who are currently serving today. “It gives the family closure, and I think it gives the war fighter a sense of comfort to know that no matter what happens, the nation has not forgotten them and will return them home with honor,” said McKay. All 16 sailors will be memorialized on a group marker in section 46 of Arlington National Cemetery, which is between the amphitheater and the USS Maine Mast memorial.

(Source: Navy Public Affairs Support Element)
While it was once assumed that genetic and environmental contributions to observed variation in many human physical and behavioral features were independent of each other, advances in the field of epigenetics have confirmed the dynamic nature of the interactions between the genome and the environment, which result in phenotypic variation.

Epigenetics can be defined broadly as any alteration in gene expression without changes in nucleotide sequencing. 1 On this basis, the development of the dentition can be viewed as comprising a series of spatial and temporal interactions between epithelial and ectomesenchymal tissues, where minor perturbations in the process of odontogenesis may have significant effects on final phenotypic expression.2

Describing dental phenotypes in greater detail (compared with traditional methods), together with application of modern approaches to large-scale genome scanning,3 now provides an opportunity to explore genetic, epigenetic and environmental influences on the human dentition in more detail than has been possible previously. This has led to a new era of dental phenomics,2 which involves either intensive (detailed descriptions of multiple features on a single tooth) or extensive (detailed descriptions of multiple features across multiple teeth) phenotyping of the dentition.4

The development of new equipment for measuring teeth in two dimensions (2-D) and three dimensions (3-D), including laser scanners, has facilitated the development of dental phenomics. Recent studies have shown both 2-D and 3-D techniques display high levels of reliability, precision and accuracy,5,6 opening up a range of exciting possibilities for dental researchers to define new, and more biologically meaningful, phenotypes.

Figure 1 shows an example of 3-D imaging of the dental models of a pair of monozygotic (MZ) twins, demonstrating the high degree of detail and depth.
of dental features possible using 3-D laser technology.

The value of twin studies in dental phenomics

Our studies of Australian twins commenced in the School of Dentistry at the University of Adelaide in the early 1980s, and currently there are records of more than 1,200 pairs of twins across three main cohorts of participants.

The first cohort consists of around 300 pairs of teenage twins, for whom various records have been collected, including dental casts, facial photographs, finger and palm prints and information on laterality, including handedness.

The second cohort comprises around 300 pairs of twins who have been examined at three stages of dental development from approximately 4 to 14 years of age. Only the right maxillary central and permanent dentition stages.

The most recent study of tooth emergence and oral health provides a third cohort of around 600 twin pairs, aged from birth to around 5 to 6 years.

Our broad aim in these studies has been to improve our understanding of heritable and environmental factors and their interactions in the development, even in genetically identical twin pairs.\(^1\)

While the twin pair described in this article illustrates the value of identifying a twin pair as well as their similarities (i.e., the MZ co-twin model), there are other twin models available to researchers. These include the traditional or classical twin model (comparisons between MZ twin pairs and DZ twin pairs, which vary in their genetic and environmental components, the investigation of twins and other family members, the MZ, half-sibling model, and the DZ opposite sex model).\(^2\)

Case study: MZ co-twins showing similarities, dissimilarities and asymmetry in the expression of various dental features

We have found many examples of MZ twin pairs who exhibit varying degrees of similarity and dissimilarity in the expression of various dental features. This particular case study describes a pair of female MZ co-twins selected from the second cohort for whom facial photographs, and study models of the primary and mixed dentition are available. \(^4\)

by analysis of up to six highly variable genetic loci (FES, vWA31, F13A1, D2S1331, RGA) on six different chromosome, using DNA obtained from buccal cells.

This particular MZ co-twin pair has been selected to highlight how similarities, dissimilarities and asymmetry of dental features may all occur in a pair of genetically identical twins.

Similarities in the expression of Carabelli trait

Carabelli trait is evident on the lingual aspect of the mesio-lingual cusp for all primary maxillary lateral incisors (arrowed), while Twin A does not exhibit any fused teeth. The assumption that the teeth are fused (in contrast to being gminated) is based on the fact that there is one less tooth than expected in each quadrant.

Asymmetry (and mirror-imaging) in the expression of retained primary maxillary lateral incisor teeth

One particularly interesting expression of asymmetry that can be observed in MZ twin pairs is the phenomenon of mirror imaging, where one twin mirrors the other for one or more features. An example of mirror imaging is shown in Figure 4, which presents a frontal view of the upper primary dentition of Twins A and B.

The upper left lateral incisor of twin B is worn and retained (with the upper right lateral incisor of twin B missing), while Twin A exhibits a mirror image of this, i.e., the upper right lateral incisor of twin A is worn and retained (with the upper left lateral incisor missing) (arrowed).

There is evidence to suggest that many of these dental features discussed may be inter-related, for example, Carabelli trait and the size of teeth, and anomalies of number, size and shape of teeth.\(^5\)

This case study highlights how MZ co-twins provide an extremely valuable research model, for example, just one pair of MZ co-twins displaying similarities, dissimilarities and asymmetry in their dentitions offers great opportunity to understand more deeply the underlying biological processes of tooth formation.

Use of high-precision 2-D and 3-D imaging equipment will not only enable us to quantify and describe dental variations, such as Carabelli trait, in more detail than has been possible previously, but also identify new phenotypes that we have not been able to measure previously, including small grooves and tubercles, as well as crown contours, areas and volumes.

How can dental phenomics enhance future understanding of biological processes related to dental development?

We plan to maximize the use of the longitudinal data and DNA we have collected, and continue to collect, by performing large-scale studies using DNA and phenotypic data to identify genetic and environmental factors that influence tooth development.

For example, we hope to identify the underlying biological processes of tooth formation.

By developing the field of dental phenomics we hope to better understand how genetic, environmental and epigenetic factors interact to produce the extensive range of variation observed in the human dentition.

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References

The American Academy of Pediatric Dentistry (AAPD) 66th Annual Session will be held May 23–26 in Orlando, Fla. Anyone (member or non-member dentist, dentists’ staff or dental student) who wants to attend any portion of the scientific program must register. All registration categories include all education sessions (except those specified), the welcome reception, complimentary beverages in exhibit hall and the scientific proceedings. The guest registration is additional and must accompany that of an attendee; children are complimentary to the meeting, but tickets must be purchased for social events. Guests do not earn any continuing education credit; if seeking a C.E. certificate, spouses/guests must register as office staff. Cutoff for an advance-registration discount is Monday, April 8.

**Keynote: Chef Marcus Samuelsson**

The keynote speaker is Marcus Samuelsson, an internationally acclaimed chef, philanthropist, and a New York Times best-selling author. Samuelsson is the youngest chef to ever achieve two three-star reviews from The New York Times and he has been honored by the James Beard Foundation on multiple occasions including Rising Star Chef (1999), Best Chef New York City (2003), Best International Cookbook (2007) and Best Television Program (for Chopped 2012). The author of several award-winning cookbooks, Samuelsson released his best-selling memoir, “Yes, Chef,” in June 2012.

**Networking and fun**

Social events include the welcome reception at Disney’s Hollywood Studios, a theme park with a motion-picture theme covering the Golden Age of the Silver Screen through to the Disney-Pixar partnership. Attractions, shows, shops and restaurants are exclusively available to AAPD members for the evening. Other networking events include a 5K run/walk at Epcot Center, a career opportunities fair, new pediatric dentist happy hour, international reception and the president’s farewell dinner at the Walt Disney World Dolphin Hotel. Also available are a number of tours and theme-park packages, including: Airboats and Alligators, Kennedy Space Center, Disney’s Animal Kingdom Behind-The-Scenes, SeaWorld Private Tour, Universal Studios and Islands of Adventure, Disney’s Magic Kingdom Backstage — as well as other special Disney theme park prices and hours.

**Online itinerary planner**

Access the online itinerary planner at www.aapd.org/annual/annual_2013 to view the complete scientific program with course descriptions, speaker bios and more. You can search by session type, day or keywords. You also can create an account to save your preferred sessions and exhibitors. See the current exhibitors online on the “Exhibitors” pages, and plan out who to visit to examine supplies hands-on before purchase. Search exhibitors by category or company.

**About the AAPD**

Founded in 1947, the AAPD is a not-for-profit professional membership association representing the specialty of pediatric dentistry. Its 8,400 members provide primary care and comprehensive dental specialty treatments for infants, children, adolescents and individuals with special health care needs. As advocates for children’s oral health, the AAPD promotes evidence-based policies and clinical guidelines, educates and informs policymakers and parents, fosters research, and provides professional continuing education for all dentists who treat children. Learn more at www.aapd.org.

(Source: AAPD)
The Montréal skyline is reflected in the water on a summer evening. Photo/Provided by MTOQ/Perry Mastrovito

JDIQ courses filling fast

Journées dentaires internationales du Québec May 24–28

Courses are filling fast for the Journées dentaires internationales du Québec, May 24–28, at the Palais des congrès de Montréal. As of mid-February, three courses were already sold out, meeting organizers reported.

The annual meeting of the Ordre des dentistes du Québec continues to be Canada’s largest dental meeting and expects to host more than 12,000 delegates from around the world. With a scientific program with more than 100 lectures and workshops in English and French, JDIQ maintains its status as the world’s most highly attended bilingual (English/French) convention.

More than 225 exhibitors will span 500 booths in the exhibit hall. Monday and Tuesday, May 27 and 28. The exhibit hall will feature a continental breakfast from 8–8:30 a.m. on both days for the early risers — and a wine-and-cheese reception closing out both days.

Featured speakers for this 43rd edition of the event include Drs. Dan Nathanson, Gerard Kugel, David Clark, Gérard Chiche, Mark Piper, George Freedman, Paresh Shah and Rhonda Savage, to name a few.

For more information, call (800) 361-4887, or visit www.odq.qc.ca and e-mail congres@odq.qc.ca. (Source: JDIQ)

Registration for this offer is only available on site at the Anaheim Convention Center.

The exhibit floor will feature more than 550 companies showcasing the latest in dental technology, products and services. The products and services will be on display in the 135,000-square-foot trade show floor in the Anaheim Convention Center. Event organizers say there will be more than 100 new product launches at CDA Presents in Anaheim. A number of “cool products” will receive extra attention by being on display at “The Spot.” One of these products is Colgate PreviDent 5000 Booster Plus. Booster Plus contains 1.1 percent sodium FluorGard technology and tricalcium phosphate. According to Colgate, the new formula is shown to provide better remineralization after 10 days and remineralization after 20 days.

Another “Cool Product” is XVI by Orascoptic. XVI is a wireless loupe and headlight in one, with a lightweight, wireless design. “Designed with ergonomics, function and style in mind, with XVI we’ve addressed the top two concerns with dental loupes and headlights – we eliminated wires and battery packs to allow freedom of movement and we delivered precise counter-balance and flexible adjustment features to reduce pressure on the nose, head and ears,” said Damon Baker, general manager of Orascoptic.

Air Techniques will have its Monarch product on display. The infection-control products are designed specifically for dental practices. The products are to be used on surfaces, instruments and skin and hands. “One-step disinfection saves time, and innovative packaging designs reduce plastic container waste. Anticorrosive formulas protect lines and operatory and utility equipment,” Brown said.

Carestream will showcase CS Solutions, which “creates a new reality for restorative dentistry: one-visit, chairside restorations, according to Carestream literature.” CS Solutions consists of an intraoral scanner, restoration design software, a milling machine and a Web portal for sharing and managing restoration cases between dentists and laboratories. (Source: CDA Presents)
Five-day, hands-on implant course presented in Jamaica

The American Academy of Implant Prosthodontics (AAIP) joined with its affiliates, Atlantic Dental Implant Seminars (ADIS) and the Linkow Implant Institute, to present a five-day comprehensive implant training course in Kingston, Jamaica, from Jan. 13–17.

The course included lectures, surgical and prosthodontic demonstrations, hands-on participation on cadavers and anatomic manikins, diagnosis and treatment planning of implant cases, the construction of surgical templates, diagnostic wax-ups, the insertion of implants by each participant and sinus lifts under supervision of the course faculty.

45 implants, 5 sinus lifts and more

The six participating dentists inserted 45 implants, performed five sinus lifts, completed four guided bone-regeneration procedures with immediate implant placements, and made multiple impressions of various implant situations with a variety of impression materials and techniques. Patients were provided by the Jamaican Ministry of Health and the University of Technology, School of Dental Sciences, Jamaica.

Course participants were from Illinois, Jamaica, New Jersey and Texas. Upon completion of the one-week comprehensive implant training program, participating clinicians are able to accomplish the following tasks: identify cases suitable for dental implants; diagnose and treatment plan for preservation and restoration of edentulous and partially edentulous arches; demonstrate competency in the placement of single-tooth implants, soft-tissue management, and bone augmentation; obtain an ideal implant occlusion; work as part of an implant team with other professionals; and incorporate implant treatment into private practice with quality results, cost effectiveness, and profitability.

Worth 35 C.E. credits

A dental degree was required for all participants. The course is tax deductible and 35 hours of dental continuing education credits was awarded on course completion. Patient treatment is provided in a Jamaican dental school with personalized training in small-group settings. The course is a cooperative effort of the Jamaican Ministry of Health, the University of Technology, School of Dental Sciences, Jamaica and the American Academy of Implant Prosthodontics.

Dr. Mike Shulman is course coordinator, Dr. Leonard I. Linkow is course director, and Dr. Sheldon Winkler is course advisor. Course faculty, in addition to Drs. Shulman, Linkow and Winkler, include Drs. Robert Braun, Ira L. Eisenstein, E. Richard Hughes, Charles S. Mandell, Harold F. Morris, Peter A. Neff, Robert Russo and Robert E. Weiner.

Implants and components for AAIP/ADIS implant seminars are provided by HIOSSEN Dental Implants. Dental laboratory support is provided by DCA Laboratory, Citrus Heights, Calif., Dant Dental Studio, Temple, Ariz., and Dutton Dental Concepts, Bolivar, Ohio.

Next course scheduled

The next AAIP/ADIS implant seminar in Jamaica is scheduled for Sept. 26–30.

Complete information on the AAIP/ADIS Jamaica implant continuing education programs, including tuition, faculty lectures, transportation and hotel accommodations, can be obtained from the course website, www.adiseminars.com, or by calling (201) 788-7663. AAIP membership information can be obtained from the AAIP headquarters at 8672 East Eagle Claw Drive, Scottsdale, AZ, 85266-1058; telephone (480) 588-8062; fax (480) 588-8296; or send an email to swwdent@cox.net. The AAIP website is www.aaipusa.com.
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— Joe Bussell, DDS; Little Rock, Ark.

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— Robert Klein, DDS; Kansas City, Mo.

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— James Nicholson, DDS; Muskogee, Okla.
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New technology pavilions featured at 2013 Greater New York Dental Meeting

Registration is now open for the 2013 Greater New York Dental Meeting (GNYDM). Organizers of the 89th annual meeting anticipate the largest attendance yet. New for the 2013 meeting will be a redesign of the exhibit floor — with the addition of new technology pavilions and a unique dental laboratory exhibition. The exhibit floor and the diverse continuing education programs are the centerpiece of the expansive annual meeting. Attendees are able to walk the exhibit floor for free (no preregistration fee) and meet with more than 600 companies selling the newest products and advanced technologies. The education program will include 300 full- and half-day seminars, essays and hands-on workshops. Among the specialty programs are topics including orthodontics, endodontics, cosmetic dentistry, pediatric dentistry and implant dentistry.

The GNYDM is introducing three new hands-on educational pavilions, including lasers, CAD/CAMs and cone-beam/CT/X-rays. Each of these pavilions will house multiple companies providing information on the latest technologies that can be used in the dental office. Attendees will be able to instantly compare all the products in one location, while also becoming more familiar with the state-of-the-art technology by attending morning and afternoon educational programs presented at each pavilion.

The Greater New York Dental Meeting and Aegis Publishing, Inside Dental Technology, have announced a groundbreaking partnership in laboratory technology. Collaboration 2013 will provide a designated laboratory exhibit area on the GNYDM exhibit floor, specialized education, demonstrations, digital dentistry and technology that will engage technicians and dentists side-by-side in an integrated, hands-on experience.

The Greater New York Dental Meeting continues to offer a modern, high-tech free “live dentistry” arena daily from Sunday through Wednesday. The interactive “live” program features top clinicians performing dental procedures on actual patients on stage, in front of 600 attendees. It all takes place right on the exhibit floor. Attendees are encouraged to arrive early because seats fill quickly.

The GNYDM is the largest dental congress and exhibition in the United States, registering 53,481 attendees from all 50 states and 130 countries in 2012.

There is never a pre-registration fee at the Greater New York Dental Meeting. Dental professionals are invited to be part of the 2013 meeting to experience the energy of an event that draws top dental professionals from around the world. You’ll also get to see all that New York City has to offer during one of its most beautiful times of the year, Nov. 29 through Dec. 4. Free registration is now open for the 2013 meeting at www.gnydm.com.

Tell us what you think!
Is there a topic you would like to see articles about in Dental Tribune U.S.? Let us know by e-mailing us at feedback@dental-tribune.com. We look forward to hearing from you!
Biolase hands-on showcase includes all-new laser and imaging systems

Biolase, a leading dental laser manufacturer and distributor — and distributor of NewTom and 3Shape TRIOS technologies in North America — will showcase its full line of award-winning laser systems, 3-D cone-beam devices and digital intraoral scanning technology at all major and regional 2013 trade events, including the California Dental Association meeting in Anaheim.

The company will feature the products in a new "Total Technology Pavilion," a large space with functioning equipment to allow hands-on demonstrations and discussions of the full range of applications. The Total Technology Pavilion will also feature an overview presentation of the Total Technology concept, along with brief presentations by practicing dentists who have deployed these technologies in their local practices. Biolase will be showcasing its line of dental lasers in booth No. 2518 and its line of NewTom products in booth No. 2519.

"We are proud to present our award-winning systems at the California Dental Association convention and beyond," said John Bernhard, director of marketing at Biolase. "It represents the collective efforts of multiple teams to create an environment where dental professionals can spend time with these groundbreaking technologies to gain an understanding of their applications in the dental clinic."

**EPIC diode lasers packed with category-exclusive features**

New to the California Dental Association convention this year is the EPIC Total Diode Solution, the newest laser from Biolase. It is described as being packed with one category-exclusive feature after another, setting a new standard in diode laser performance and value.

A graphical touchscreen gives dentists fingertip access to as many as 20 common soft-tissue procedure presets plus 20-minute full-mouth whitening and FDA-cleared temporary pain relief. Additionally, EPIC can be a financial boon for many practices because of its integrated, FDA-cleared protocols for laser hygiene and perio as an adjunct to scaling and root planning. Plus, a new Comfort Pulse feature, yielding reduced pulse length to as little as one tenth-millionth of a second to avoid heat build-up at the surgical site — for fast tissue cutting with less patient discomfort.

**More laser products**

Other products available include WaterLase iPlus, WaterLase MDX and WaterLase MD Turbo, the company's full range of all-tissue laser devices. WaterLase iPlus represents a pinnacle of 20 years of research to improve cutting performance with less pain and faster recovery. Its imaging performance is relatively new to dentistry and is a more compact version of standard medical CT imaging that uses a cone-shaped X-ray beam to obtain a multitude of radiographs that construct digital 3-D models of maxillofacial anatomies. The WaterLase iPlus is reported to have one of the finest image qualities of any CBCT system in dentistry, with a minimal dose of radiation to patients. A small footprint, a full 360-degree scan, a small focal spot, higher resolution, seven fields of view — everything works to deliver super-sharp images. Dentists using the WaterLase CBCT technology report increased treatment-plan acceptance, improved diagnostic capabilities and other advantages.

This year at CDA, Biolase will be launching the NewTom VG3, an all-new, full-featured three-in-one imaging system. Panoramic, Cephalometric and 3-D CT scans, all from one, affordable device. These devices in one system for economics in space and cost. The VG3 offers multiple fields of view, a removable 2-D sensor and much more. The VG3 also offers patented Safebeam technology, which gives off the lowest possible dose of radiation to patients. Furthermore, the NewTom VG3 will incorporate the new generation of NNT software.

**About Biolase**

Biolase is a biomedical company that develops, manufactures and markets dental lasers and distributes and markets dental imaging equipment. The company's laser products incorporate approximately 290 patented and patent-pending technologies that provide biological treatment and clinically superior performance with less pain and faster recovery. Its imaging products provide cutting-edge technology at competitive prices to deliver the best results for dentists and patients. Biolase's core products include dental laser systems that perform a broad range of procedures (including cosmetic and complex surgical applications) as well as a full line of dental imaging equipment and CAD/CAM systems. Biolase has sold more than 31,000 lasers.

(Source: Biolase)
3 reasons your website should be optimized for mobile device users

Deliver the experience that smartphone users expect

By Diana P. Friedman, MA, MBA

According to Pew Internet, 45 percent of American adults owned a smartphone as of December 2012. As these powerful devices increasingly make their way into the pockets and purses of your existing and potential patients, it’s a business imperative that your website deliver the experience these users expect. A strong mobile presence helps you get in front of prospective patients at the moment they’re looking for your business, and capture their attention once you have it. On the other hand, if your site doesn’t look good or function properly on a smartphone, it won’t take long for patients to move on to one that does. Not sure if mobile is important to your practice? Here are three reasons you could be missing the boat — and missing easy opportunities to attract new patients to your practice.

Mobile is where your patients are

Many of your patients probably use the mobile Web; if they don’t, it’s likely just a matter of time until they do. Eighty-seven percent of smartphone users access the internet using their phones, and U.S. smartphone users spend an average of 13 billion minutes a month on the mobile Web. Mobile Web usage has exploded over the past few years and shows no signs of slowing; it’s currently the fastest-growing source of internet traffic, and many industry experts project that mobile internet usage will exceed desktop internet usage by 2014.

For many smartphone users, mobile has also become their preferred way to use the Web: 31 percent of current mobile Web users mostly go online using their phones. A sesame Communications research case study found that a mobile website drove an average of 19 calls per month to the practice.

With so many of your patients “going mobile” these days, it’s important to make sure they can quickly and easily access your site on their devices.

Mobile is how patients research — and make — buying decisions

More and more people are using the mobile Web to research and buy goods and services. In 2011 more than $106 billion in online purchases were made on mobile devices, and this number is expected to grow at least 42 percent every year through 2015.

Even people who don’t buy anything on their mobile devices often use them to research their purchases.

Optimizing your website for mobile will help you best capitalize on the mobile Web as a tool for building relationships with patients.

Your practice in the palm of their hand

Sesame Mobile

Mobile is the fastest-growing source of traffic on the Internet.

These are your patients, looking up your practice on the go, and it is crucial that your website properly displays on their mobile device. A mobile optimized website from Sesame ensures that you, not your competitors, convert a visitor into a new patient.

Reach on-the-go patients today!
866-489-7778
solutions@sesamecommunications.com
www.sesamecommunications.com

CDA BOOTH NO. 1580
AACD BOOTH NO. 227

*See MOBILE, page A15*
Expert Dental CE creates two restorative, esthetic modules

Courses designed to address single biggest reason for rejected insurance claims: poor, marginal fit

In keeping with its mission to provide high-level online CE courses, Expert Dental CE (www.expertdentalce.com) has launched its first two modular programs in Restorative and Aesthetic Advances.

Both modules are CERP approved. “Our mission,” said Expert Dental CE Co-Founder Dr. Frank Murphy, “is to equip dentists with the learning more than a superficial introduction to a technique, while at the same time offering material that is useful and practical.”

Learn the latest techniques for everyday procedures

Module One ($219 and worth six C.E. credits) consists of the following scholars and topics:
- Dr. Charles Goodacre on “How to Achieve Excellent Marginal Fit & Cervical Contour with Crowns.”
- Dr. Burney Croll on “Emergence Profiles in Natural Tooth Contour.”
- Dr. Graz Giglio on “Crown Lengthening: A Powerful Tool for Healthier Gums” and Better Crowns.”
- Dr. Dennis Tarnow on “Periodontal and Prosthetic Management of Furrat ed Teeth: Parts I, II, III.”

“We created this module, in part, because one of the single biggest reasons insurance claims are rejected by carriers is poor marginal fit,” said Expert Dental CE’s other co-founder, Dr. Alan Winter. “But that’s not the only reason.” Winter also said that as dentists gain more clinical experiences through the years, they can become more removed from their dental school education, and there is a great benefit to gain from brushing up on the latest techniques for everyday procedures. “As a practicing periododontist,” he said, “we see greater value in learning how to reduce the incidence of periodontal disease and save dentitions than in taking a course that requires four surgeries and expensive biologics to grow a papilla or 1 millimeter of bone.”

Newest theories in smile design

Module Two ($219 and worth 10 C.E. credits) features the following scholars and topics:
- Dr. Graz Giglio on “A Review of Smile Design Parameters” and “Achieving Aesthetic Laminates.”
- Dr. Mariano Polack on “Understanding Current All-Ceramic Systems”
- Dr. Dean Vafiadis on “Computerized Dentistry for Private Practice: Abutments, Ceramics and Occlusion.”

Module Two caries Expert Dental CE’s agenda forward by combining four outstanding lectures into a cohesive group that explores the up-to-date theories in smile design, performing laminate veneers and understanding the differences in ceramics and the cements they require for the best performance and esthetics. Also covered in detail is the latest information available on current knowledge for chairside CAD/CAM technologies for single units and implants.

For more information, contact Expert Dental CE at info@xpapce.com or visit: www.expertdentalce.com

(double-column)

MOBILE, page A14

to research future purchases. 92 percent of smartphone users seek local information on their device, and 89 percent have taken action after looking up local content. More significantly for your practice, 52 percent of smartphone owners have used their phones to search for health information.

Without a mobile-optimized site, your practice will have a harder time driving new and repeat appointments from the mobile Web. Mobile shoppers are more likely to buy something if the company’s site is optimized for mobile, and are more likely to return to a site in the future if their mobile experience is good.

You may be driving away patients

Many mobile users now expect any brand they engage with to have a mobile-optimized site. Nearly half of smartphone users say that visiting a non-mobile-friendly site makes them feel like the company doesn’t care about them.

Additionally, more than half of mobile users say they won’t recommend a business with a poorly designed mobile site.

If smartphone users reach a site and see that it’s not optimized for mobile, what will they do? They might leave — 74 percent of mobile users are only willing to wait five seconds or less for a single Web page to load before leaving the site. Or worse, they might visit a competitor’s site — 61 percent of customers who visit a website that is not mobile-friendly will leave to visit a competitor.

The bottom line is that a mobile-optimized site can hurt your relationships with current patients, and drive away prospective ones. As smartphone and mobile Web usage continues to grow, this will only become a bigger issue for dental practices without mobile-optimized sites.

The mobile Web is where many of your patients are, and where they go to find and research your dental practice. Optimizing your website for mobile will help you best capitalize on the mobile Web as a tool for building and strengthening relationships with patients. In selecting a partner to launch your mobile site, make certain they understand on-the-go patient online behavior and leverage your existing online practice brand and social media channels to optimize the impact of your new mobile site.

• References

6. See citation 1
7. Today’s Dental 2012 case study, Sesame Communications.

(For more information, visit Expert Dental CE at www.expertdentalce.com)

(Dr. Dennis Tarnow)

(Dr. Graz Giglio)

(Dr. Dean Vafiadis)

(Dr. Charles Goodacre)

(Dr. Jim Fine)

(Dr. Mariano Polack)

(DIANA P. FRIEDMAN, MA, MBA, is president and chief executive officer of Sesame Communications. She has a 20-year success track record in leading dental innovation and marketing. She has served as a recognized practice management consultant, author and speaker. She holds an MA in sociology and an MBA from Arizona State University.

10. See citation 4
12. See citation 9

(Expert Dental CE)

(See citation 11)

(See citation 10)
Implant position in esthetic zone

Since the advent of modern root form osseointegrated implant dentistry in 1952, clinicians have strived for improvements in implant positioning in the esthetic zone to achieve predictable restorative and esthetic results. Years of clinical experience in conjunction with controlled clinical studies have helped establish parameters as a guide for these results. Establishing a treatment plan and clinical protocol prior to implant placement is paramount.

Treatment planning traditionally begins with comprehensive medical and dental evaluations, articulated diagnostics, casts, radiographs, cone-beam computed tomography (CBCT) scans and a diagnostic wax-up. Patient demands must be taken into consideration prior to surgery, and presurgical mockups may be necessary to convey the information to the patient.

The advancement of CBCT technology has led dentistry into a new realm of dimensional accuracy. In combination with the use of a surgical or guided stent, proper 3-D positioning of an implant has led to more accurate clinical results. The importance of the implant position can be manifested in the four dimensional-sensitive positioning criteria: mesiodistal, labiolingual, and apico-coronal location, as well as implant angulation. The ultimate goal is not only to avoid sensitive structures, but to respect the established biological principles to achieve esthetic results.

Mesiodistal criteria
Correct implant position in a mesiodistal orientation allows the clinician to avoid damaging adjacent critical structures. A minimum distance of 1.5 mm between implant and existing dentition prevents damage to the adjacent teeth and provides proper osseointegration and gingival contours (Fig. 1a). Distances of less than 3 mm between two adjacent implants leads to increased bone loss and can reduce the height of the inter-implant bone crest. A distance of more than 3 mm between two adjacent implants preserves the bone, giving a better chance of proper interproximal papillary height (Fig. 1b).

Labiolingual criteria
An implant placed too far labially can cause bone dehiscence and gingival recession, while an implant placed too far lingually can cause prosthetic difficulties. A thickness of 1.8 mm of labial bone is critical in maintaining an implant soft tissue profile (Fig. 2). Labially oriented implants preserve the bone, giving a better chance of proper interproximal papillary height (Fig. 1b).

Apico-coronal criteria
A peri-implant crestal bone stability plays a critical role in the presence of interdental papilla.1 Implants placed too shallow may reveal the metal collar of the implant through the gingiva. Countersinking implants below the level of the crestal bone may give prosthetic advantages, but can lead to crestal bone loss. The ideal solution would be the placement of an implant equicrestal or subcrestal to the ridge. However, the existing microgap at the implant abutment junction leads to bone resorption due to peri-implant inflammation.2 It is suggested that an implant collar be located 2 mm apical to the CEJ of an adjacent tooth if no gingival recession is present (Fig. 3).

Implant angulation
Implant angulation is particularly important in treatment planning for screw-retained restorations. Implants angled too far labially compromise the placement of the restorative screw while implants angled too far lingually can result in unhygienic and unesthetic prosthetic design. For every millimeter of lingual inclination, the implant should be placed an additional millimeter apically to create an optimal esthetic profile. In general, implant angulation should mimic angulation of adjacent teeth (Fig. 4). Furthermore, maxillary anterior regions require a sublabial palatal angulation to increase labial soft tissue bulk.3

Inclusive tooth replacement
The Inclusive® Tooth Replacement Solution was developed by Glidewell Laboratories as a complete, prosthetically driven method of restoring missing dentition. The solution comprises treatment planning, implant placement, patient-specific temporization, and the definitive restoration (Figs. 5a–5f). When utilizing the comprehensive range of Inclusive solutions, the Clinician can achieve a consistently predictable result. To read the full article, you can access it on the website www.inclusivemagazine.com.

Digital Treatment Planning services, the clinician has absolute and precise control of each step. The clinician has control of the four dimensions of implant placement in the esthetic zone, creating a consistently predictable result. To read the full article, you can access it on the website www.inclusivemagazine.com.

References
Is a blind spot costing you thousands?
Help your front-office staff convert more calls into confirmed appointments

By Jay Geier

Odds are your practice is suffering because of a blind spot that I guarantee you’re not aware of. A blind spot that is costing you $5,000 to $54,000 a month (maybe even more). A blind spot that, if removed, could boost your new patients by 20-50 percent, maybe even as much as 100 percent.

‘Sandwich boards’ not enough
It all started about 15 years ago. I was vice president of marketing for a large private practice in Georgia. My sole responsibility was generating new patients, and my livelihood depended on it. I employed every imaginable tactic to get new patients — screenings, health fairs, referral contests, magazine ads, newspaper yellow page ads — just to name a few. I even wore a sandwich board and waved it at drivers passing by at one point. It was never a question of whether or not my efforts were successful. They generated hundreds of calls every month, but the hard-earned calls just weren’t translating into new patients.

As you can imagine, this was a beast that had to be tackled. So I rolled up my sleeves and started looking into it to figure out how to close the huge gap that was negating every marketing dollar spent and costing the practice thousands of dollars a day. I was able to use our practice as a learning lab. I worked day in and day out to discover the blind spot and figure out how to get rid of it. I knew I had cracked the code when the calls started translating into booked appointments and our staff set a practice record, scheduling 601 new patients in one week.

To eliminate the blind spot in your practice, it doesn’t require an additional investment. It doesn’t require a new source of new patients. It requires an open mind because it almost seems too simple to be true.

The secret lies in your telephone and your team, specifically your front-desk team. Both are investments you have already made, but they are not being developed to their peak performance potential.

Courteous, helpful isn’t enough
No doubt your staff is courteous and helpful to everyone who calls your office — and while that’s a good thing, it’s simply not good enough. In fact, their courtesy is probably resulting in lost new patients. And lost new patients means lost money.

For example, let’s say your average new patient is worth $1,500. Then one lost would cost you $1,500, five lost would cost you $7,500, and 15 would cost you $22,500. And that’s just one month’s worth. Imagine the impact of that over an entire year or how the impact would increase drastically if your patient value is higher.

Being courteous and helpful are not praiseworthy qualities if your staff doesn’t produce a profitable result and, even worse, if it is costing you money. Actually, effective “closing” skills are the attributes your staff should strive to master.

But you can’t just expect them to possess this and know how to effectively use it. No one is born with these skills. They must be taught, then practiced, and reviewed on an ongoing and consistent basis.

Courteous, helpful isn’t enough
Not knowing this can cost you thousands of dollars
If you are among the majority of dentists who are spending money to market your practice, you are absolutely not an exception. In fact, the reason for recognizing this blind spot and taking action to eliminate it is even more compelling because you are investing thousands of dollars, maybe tens of thousands, to get your phone to ring. And if the phone rings and it’s a shopper and the shopper doesn’t translate into a new patient, you might as well take every dollar, one by one, and flush them down the toilet.

It takes a lot of skill — and an open mind — to scrutinize your practice to create positive change. It takes even more talent, knowledge and a gift for teaching to work with your staff on the fine points of the changes needed to take your practice to the next level, and way beyond. But it’s worth it and it’s a win-win.

Your staff can be one of your best and most profitable marketing tools if they are trained and you leverage them correctly. But if not, they could cost you thousands.

Your staff wants to contribute to your practice’s growth
Create a plan to get your staff trained. Talented employees want training. They want to perform better and contribute to your practice’s growth and success. If you have someone who doesn’t, they shouldn’t be on your team.

Komet USA celebrates 90 years of innovation
This year, the German-based Komet® organization celebrates its 90th anniversary, a milestone that underscores the company’s long-term commitment to the worldwide dental community. Since its start, Komet has brought countless innovations to dentistry; and made the brand synonymous with precision engineered rotary instruments. When Komet’s young founders adapted their mother’s sewing machine for the milling and production of a small range of rotary instruments — the designers effectively created a contemporary look that blends the tradition and dynamic and innovative power. By combining the two elements in a unified circle — which matches the shape of rotary instruments — the designers effectively created a contemporary look that blends the tradition and quality recognized around the world.

Komet kicked off its year-long anniversary celebration by unveiling the company’s new logo and corporate image. In undertaking the logo redesign, artists aimed to capture the spirit of the times while assuring global recognition of an established, trusted brand. Following the motto, “evolution rather than revolution,” the project moved forward to support the Komet values of quality, innovation, and tradition, aiming to honor and uphold these values while moving forward. To maintain the company identity, the primary, longstanding logo elements were retained. The distinctive Komet lettering has historically been associated with the company’s values of tradition and quality, while the spiral has long stood for dynamic and innovative power. By combining the two elements in a unified circle — which matches the shape of rotary instruments — the designers effectively created a contemporary look that blends the tradition and quality recognized around the world.

Throughout 2013, Komet will celebrate its young founders who turned a simple idea into a worldwide phenomenon. The celebration includes Komet custom-designed key rings for friends and even competitors, recognizing that each has played an important role in the company’s journey.

(Source: Komet USA)
COURSE OBJECTIVES:

- Identify cases suitable for dental implants.
- Diagnose and establish a treatment plan for preservation and restoration of edentulous and partially edentulous arches.
- Demonstrate competency in placement of single tooth implants, soft tissue management and bone augmentation.
- Obtain an ideal implant occlusion.
- Work as a part of an implant team with other professionals.
- Incorporate implant treatments into private practice with quality results, cost effectiveness and profitability.

COURSE DESCRIPTION:

During the course clinician will learn how to perform preservation-oriented implant procedures with confidence and competency. Participants will learn how to make extensive treatments more cost effective, while adhering to currently accepted concepts of implant therapy.

The course includes: one day of lectures, half day of hands-on workshop on anatomic models and three days of implant placements on provided patients. Doctors will establish a treatment plan for at least 4 patients and place minimum of 4 implants. Cases will be selected based on participant’s surgical level of expertise. One-on-one instruction by course faculty is provided with procedures and techniques that can be immediately implemented into office situations.

COURSE INFORMATION:

July 4-6, 2013 (intermediate) and September 26-30, 2013 (basic)
School of Dental Sciences, Kingston, Jamaica
2 dentists per operatory

Price: $7,800 ($6,300) includes 5-day course tuition, hotel (7 nights), breakfasts, lunches and Island's transfers.

36 C.E. credits accepted by AGD for Fellowship/Mastership at AAIP
Discover ‘a thousand smiles’ at AACD event

Enjoy the Experience Music Project at the American Academy of Cosmetic Dentistry Scientific Session welcome reception, April 24

Lyrics in the Jimi Hendrix song Little Wing carry extra meaning for AACD members descending on Seattle in April. The line, “she comes to me with thousand smiles,” aptly sums up the meeting’s focus and complements the event’s welcome reception, which will take place at the Experience Music Project.

“The American Academy of Cosmetic Dentistry hosts AACD 2013 from April 24–27 at the Washington Convention Center. In addition to assembling a top lineup of dental educators, organizers are offering a number of social events, including the welcome reception at the EMP museum, a facet that was originally envisioned as a tribute to Seattle native Hendrix.

“Of the things that sets the AACD’s conferences apart from other meetings is our incredible social events,” said Ben Goodlin, AACD president. “Being social at AACD 2013 is almost as important as attending workshops and lectures. Connecting with like-minded professionals and being inspired by their work enhances your perspective on the field. Networking opportunities in Seattle are everywhere — and they’re a valuable part of your conference experience.”

The April 24 welcome reception at the EMP, which is located at the base of the Seattle Space Needle, is included in attendees’ tuition. At the EMP, attendees will be able to meet with new and old friends, enjoy refreshments, relax and learn about music’s impact throughout history. The EMP event will enable attendees explore musical evolutions from jazz to blues, to the birth of rock and hip-hop.

And, appropriately enough, among the current lineup of special exhibits is “Hear My Train a Comin’,” Hendrix Hits London,” featuring personal instruments, handwritten lyrics, original photographs, iconic outfits and rare concert footage.

The other big social event is April 25, when the AACD Charitable Foundation hosts the Celebration of Smiles fundraiser that benefits the AACD Charitable Foundation’s Give Back a Smile program. GBAS benefits the AACD Charitable Foundation’s Give Back a Smile program.

Smile Guide Touch Pro is a tablet-based interactive alternative to the traditional smile-guide books used to help patients select their preferred smile design. Screen Capture/iTunes Apple.com/us/app/smile-guide-touch

About the AACD

The AACD is the world’s largest non-profit member organization dedicated to advancing excellence in comprehensive oral care that combines art and science to optimally improve dental health, esthetics and function.

Composed of more than 6,300 cosmetic dental professionals in 70 countries, the AACD fulfills its mission by offering educational opportunities, promoting and supporting an accreditation credential, serving as a forum for the creative exchange of knowledge and ideas, and providing information to the public and the profession. For more information visit www.aacd.com.

(Source: AACD)

Right ‘touch’ helps patients envision new smile

AACD member adds new version to his tablet app

The Smile Guide Touch iPad application that helps dentists identify a patient’s cosmetic preferences is being re-branded as the Smile Guide Touch Pro. The change announced earlier this year was needed to differentiate the professional version of the app from a new basic version of the app released in February — Smile Guide Touch Basic.

The “Pro” version retains all of its previous functionality and will remain the app of choice for cosmetic dentists. The “Basic” version is designed to serve the general public.

The apps were created by American Academy of Cosmetic Dentistry member Dr. David L. Traub, under the trade name Digident. A general dentist who focuses on cosmetics and restoratives in his Floridian practice, Traub created the app to help dentists get beyond printed smile-design books and preview smiles for their patients by using a tablet computer.

Traub began working on products for dentists about 20 years ago and is the author of the tutorial, “The Digital Dentist.” For years he had been using printed smile-guide books when treating his patients, but he felt like he wasn’t receiving the level of feedback he wanted from patients regarding the smiles they liked.

“With the app, patients can see the change happen right in front of them,” Traub said. The original Smile Guide Touch, which had 240 smile versions, enabled the dentist to show changes in both the length of the lateral incisors and shapes of the six anterior teeth with the simple press of a button, he said.

The app was designed as a tool that would improve communication between the dentist, patient and lab. Dentists and patients can work together to decide on the correct shape of the teeth — the “prescription for a smile,” Traub said.

Once the smile has been designed, dentists can then print the smile or e-mail it to the lab and/or patient.

If a patient comments that he or she doesn’t like an aspect of a smile, the dentist can use the app to make the change right away, cutting down on treatment time. The “Pro” version of the app costs $99 and is available in the Apple Store.

Eventually, Traub hopes to add modules to the Smile Guide Touch. One on the drawing board will enable images of designed smiles to be integrated right into images of patients’ faces. He also hopes periodontists and orthodontists as well as cosmetic restorative dentists will see the value of his app and begin using it to enhance their understanding of patients’ desires.

(Source: Digident and AACD)
AACC advanced tuition rates end April 5

Advanced tuition rates for AACC 2013, the annual meeting of the American Academy of Cosmetic Dentistry (AACD), will end April 5 at 5 p.m. CT. Many courses and all social events are still available.

Those who register before April 5 will receive $150 off of their tuition price. Other discounts are offered for first-time lab technicians and first-time attendees. Non-members who register for AACC 2013 will receive a one-year membership in AACD included with their tuition. For a full tuition schedule, visit the website www.aacdconference.com.

“The AACD 2013 scientific session is April 24-27 in Seattle. “One of the things that makes AACD’s meeting unique is that we include with their tuition. For the full advantage of your benefits.”

For more information about the AACD, visit www.aacd.com.

(Source: AACD)
Systems, technology let practices deliver profitable, emergency cosmetic dentistry

Well-trained staff, clear policies, right tools make success routine in emergency cosmetic cases

By Craig Callen, DDS

When opportunity knocks, is your practice ready to answer? As dentists we have opportunities every day to help our patients and contribute to improving our bottom line by being ready to provide emergency cosmetic dental treatment. Working such patients into our schedule generates treatment fees at a higher-than-normal profit margin, and helps generate longer-term business. Some dentists will reserve a half hour every day for such emergencies. Because our practice has six operators and a great staff, we are able to work these patients into our schedule.

Emergency case

For example, recently we received a frantic call from a new patient, age 32. She had fallen the day before and severely fractured her central incisor. She was crying and said she could not go to work looking the way she did. She also had pain from an exposed nerve.

Our systems kicked in right away. At our morning huddle we had already discussed where to schedule any emergencies for that day. The front desk scheduled the patient and gave her a fee range to expect for treatment. The patient arrived at the appointed time and filled out her forms. One of our assistants seated her in the treatment room and obtained a digital X-ray film, which I reviewed while treating a patient in another room. I made a preliminary diagnosis and informed the assistant. The assistant printed the necessary consent and prescription forms from our computer.

Relieve pain, restore smile

When I had a short break, I stopped in and talked to the patient and informed her of the need for a root canal, post and crown. She was grateful that we could help her that same day, relieving her pain and restoring her smile.

While the patient watched a CAESY Education Systems video on the proposed treatment, our staff entered the treatment into the computer, used the Internet to verify her insurance benefits and make an application for her to CareCredit to help finance her portion of the fee. The front desk staff helped the patient complete our financial arrangement form.

After numbing the patient, the staff took digital pre-op photos, and I returned at my next break to treat the patient. First I completed the root canal using a Brassler Endosequence NiTi system with battery-powered handpiece, performing root-length determination with a Root ZX.

My EFDA-certified assistant (Expanded Functions Duties Auxiliary) set up our Cerec CAD/CAM scanning unit. I placed a fiber post and build-up using Unicem II. The tooth was prepped. It was noted that the patient’s other teeth had some older composite bonding. The preparation was scanned, and the crown was designed and milled using a B1 block of Empress porcelain from Ivoclar. The EFDA assistant fitted the crown to place. I verified the fit, and the crown was etched and silanated. I bonded the crown in, again using the Unicem II. The EFDA assistant adjusted the bite and obtained a final polish with our Brassler porcelain polishing kit.

Two hours later

In total, the patient was in our office for about two hours. I spent about half an hour chairside with her as I moved back and forth with previously scheduled patients.

The patient was extremely happy to have her smile back and said she next wants to replace her old composite bonding with porcelain. This will enable us to better balance out the width of the centrals. We were able to help the patient and add some nice bonus production to our day. A real win-win situation.

By having the systems in place, technology available and a well-trained staff on hand, we were able to easily help a patient and our bottom line.
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- Henry Schein
- Pearson Dental

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The severely mentally ill are severely underserved

Dental hygienists have unique opportunity to provide high-value care

By Lisa Stillman, RDH

One in four families in the United States is affected by severe mental illness (SMI), a life-altering disease that can be especially difficult when it emerges just as the individual is beginning to discover the freedoms of adulthood — a common age at which symptoms first present.

In addition to the psychosocial challenges faced by this population, many of these individuals also must confront a myriad of oral health issues that often end up being largely ignored — because individuals and families become overwhelmed by the chaos the illness typically brings into their lives.

With basic awareness of the unique needs of patients with an SMI, dental hygienists can play an important role in the effort to better meet not just the oral health care needs of this particularly vulnerable population — but also their overall physical and mental health needs. Three of the most likely mental illnesses that hygienists and other dental professionals should have a basic awareness of are schizophrenia, bipolar disorder and major depression [explained in more detail on page E2].

Correct diagnosis often a challenge

The most important aspect for treatment of an SMI is getting the correct diagnosis. Because of overlapping symptoms, the stigma of receiving a diagnosis, medical privacy laws, civil rights protection for the mentally ill, and a continuing lack of insight by patients, families and society, the mentally ill may go without treatment — or receive ineffective treatment for years.

At times medication is used to control symptoms before a correct diagnosis can be made.

Understand medication side effects

The health history is the biggest clue for professionals to consider to gain awareness regarding the possibility that a client is being treated for mental illness. Some clients diagnosed with mental illness will neglect to state the nature of their illness but will list the medications that they are currently using. These medications will consist of antipsychotics, antidepressants, mood stabilizers, anti-anxieties, anti-epileptics and sleep aids. Other clients might have an SMI that has not been diagnosed, or they might have received a diagnosis, but they are not taking medications. Clues here might include a somewhat disheveled appearance; odd behavior and consistently poor oral hygiene.

People being treated for mental illness often are on several medications, which can cause severe xerostomia, resulting in high caries, erosion, tooth loss, mouth infections, loss of taste and difficulty in chewing and swallowing. Other side effects include bruxism and metabolic cravings for foods high in carbohydrates. The plaque index in patients with an SMI is often quite high, causing decalcification and severe sensitivity.

Smoking, substance abuse common

The need for thorough oral cancer screening is great because statistics show that SMI correlates with tobacco use, substance abuse and other high-risk behavior. General health disorders such as diabetes, high cholesterol, cardiac dysfunction, movement disorders and agranulocytosis are serious side effects that can be attributed to medications.

The severely mentally ill

The severely mentally ill

By Lisa Stillman, RDH

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When I introduce new products and technologies to my patients, I often use analogies to help them understand how they work. For example, I compare a manual to a power toothbrush as a hand saw versus a chain saw. I start off by explaining that toothbrushes have been around for more than 5,000 years in much of the same design. You could never move your brush fast enough to break through the cell walls of oral bacteria as you can with a power brush. Just like if you were going to cut down a tree, which tool would you use to do it: a hand saw or a chain saw?

Recently I noticed that many of my patients who use Oral-B power brushes had improved oral health. I was quite surprised because I have always been the case. This piqued my interest, so while attending a continuing education retreat, CAREERfusion, I obtained two new Oral-B Deep Sweep Triaction 5000 power brushes — one for me and one for my husband. I was skeptical at first to try it out, but have been impressed with the results.

Like many of my patients, my husband has always preferred a manual toothbrush. I have made him switch because I know the benefits of using a power brush. However, even with a power brush, he still brushes in a back-and-forth motion. What I like about the new Deep Sweep brush head is that it combines pulsations and sweeps so it feels like a more traditional manual brushing motion. Now, I don’t have to correct him when he brushes as if he was using his old manual toothbrush.

While I have always liked using power brushes, the new Oral-B Deep Sweep Triaction 5000 has shown me that I haven’t been brushing as properly as I thought. This brush comes with a separate piece, the wireless Smart Guide, to place onto the sink to guide brushing and warn the user if they’re brushing too hard or not long enough. The Deep Sweep Triaction 5000 also has a red light built into the handle that indicates when you are using too much pressure. I had never realized before that I brush too hard until my handle started lighting up like a disco ball! Having the wireless Smart Guide feature feels like you have your own personal dental hygienist observing you while you’re brushing.

I now feel compelled to share my new preference of the Oral-B Deep Sweep with my patients, especially since studies show the effectiveness of plaque removal. Like with my saw analogy, I must now come up with a metaphor for the Oral-B Deep Sweep, demonstrating how the power brush has advanced even further.
When treating a client with an SMI, dental hygienists need to be aware that hallucinations generated may be interpreted as painful or extremely annoying. Using a soft toothbrush may be a better option. The taste of the polish offered should be appealing, otherwise consider substituting polish with fluoridated toothpaste.

For keeping the patient calm, the use of audio to muffle dental sounds can be helpful. It also can help to quickly dispensing gauze splattered with blood and debris and if possible keep dental instruments out of sight.

Although electric toothbrushes may be ideal for home-care use, some clients may have a low tolerance for the vibrations. Therefore, a manual toothbrush with a comfortable handle and grip may be a better choice. Sometimes relying on a Waterpik, oral rinses, home fluorides, remineralization pastes, probiotic livers, xylitol gum and mints may be a better choice. Sometimes relying on a Waterpik, oral rinses, home fluorides, remineralization pastes, probiotic livers, xylitol gum and mints may be a better choice.

Be organized, upbeat, caring Dental professionals should strive to have a keen understanding of these patients’ unique fears and follow a systematic approach in a well-organized, upbeat, and caring manner.

Be organized, upbeat, caring Dental professionals should strive to have a keen understanding of these patients’ unique fears and follow a systematic approach in a well-organized, upbeat, and caring manner.

After evaluating the oral health needs — and understanding the impact of the illness itself on the patient’s thought process and behaviors — the dental hygienist can offer creative and thoughtful suggestions to motivate these dental clients.

Dental hygienists have a unique opportunity to offer not just oral care but to give these clients a safe and secure place to feel “cared for.”

3 severe mental illnesses dominate

Schizophrenia

Schizophrenia is a chronic, severe and disabling brain disease characterized by a disintegration of the process of thinking, emotional responsiveness and contact with reality and consists of a group of symptoms that show wide variations in disordered thinking, feelings and behavior.

One percent of the U.S. population is affected, primarily between the ages of 17 to 24 in males and 18 to 35 in females. The illness is universal in symptoms across all cultures. It is considered an epigenetic/ genetic illness, which means if one carries the phenotype, certain environmental forces over time can cause the expression of these genes. These environmental forces can include: social stress, drug abuse, head trauma, infections and outside factors that can contribute to dysfunctional brain development. Each case is unique and depending upon severity of the symptoms, lifelong treatment can include: medication, hospitalization, psychotherapy, cognitive therapy, job coaching and alternative housing.

(Source: National Institute of Mental Health)

Bipolar disorder

Bipolar disorder is a medical illness that causes extreme shifts in mood, energy and functioning. These changes may be subtle or dramatic and typically vary greatly over the course of a person’s life as well as among individuals.

More than 10 million people in the United States have bipolar disorder.

Major depression

Major depression is a serious medical illness affecting 15 million American adults, or approximately 3 to 8 percent of the adult population in a given year. Unlike normal emotional experiences of sadness, loss or passing mood states, major depression is persistent and can significantly interfere with an individual’s thoughts, behavior, mood, activity and physical health.

Among all medical illnesses, major depression is the leading cause of dis-
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- **Concentrate**
  Cavex ImpreSafe is a highly concentrated disinfection fluid, saving storage space. 30 ml of Cavex ImpreSafe is sufficient for 1 liter of disinfectant. So 1 bottle of Cavex ImpreSafe gives 33 liters of ready-to-use disinfection fluid. The bottle has an easy dosage system.

- **Safe**
  Cavex ImpreSafe is 100% aldehyde free, making this non-toxic fluid very safe to use. Cavex ImpreSafe has a friendly, neutral smell.

- **Complete system**
  Cavex ImpreSafe is available as a complete system. This system comprises 1 liter of Cavex ImpreSafe disinfectant, a disinfection container, shipping bags, a timer and a protocol.

- **Reliable and secure**
  Cavex ImpreSafe has been thoroughly tested by expert laboratories (official reports on www.cavex.nl) and has proven to be a reliable and highly effective disinfection system. Complies with EN 1040, EN 1275, EN 13727, EN 13624, EN 14561, EN 14562.

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**Cavex ImpreSafe disinfection protocol**

**Bactericide, fungicide, virucide disinfectant suitable for disinfecting alginate, polyether and silicone impressions**

**Mixing ratio:** 30 ml disinfectant on 1 liter of water  
**Exposure time:** 3 minutes

1. Squeeze bottle and fill measuring cup up to 30 ml.
2. Pour water in reservoir first, up to indicated stripe (app. 1 liter).
3. Pour disinfectant into reservoir.
4. Place impression on tray in container.
5. Lower impression into fluid. Disinfect for 3 minutes by using the timer.
6. After 3 minutes, take the tray out of disinfectant fluid.
7. Rinse off with water
8. Shake off excess water and put impression in a plastic bag. Seal airtight. Mark the bag as “disinfected”.

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