For the Dental Professional

DENTAL TRIBUNE

The World's Dental Newspaper · Middle East & Africa Edition

PRINTED IN DUBAI | www.dental-tribune.me | March-April 2016 | No. 2, Vol. 6

HYGIENE TRIBUNE

CAPP will host a gathering for dental hygienists in November in Dubai

►Insertion

ENDO TRIBUNE

Endodontic imaging mode available from Planmeca

►Insertion

LAB TRIBUNE

IPS Style: more beautiful, easier and more comfortable

►Insertion

IMPLANT TRIBUNE

AAID MaxiCourses

►Insertion

Dentsply Sirona: Merger Creates the Dental Solutions Company™

By Dentsply Sirona

YORK, PA USA/AUSTRIA: Dentsply Sirona Inc. (NASDAQ: XRAY) today announced that it has successfully completed the merger of equals between DENTSPLY International Inc. ("Dentsply") and Sirona Dental Systems, Inc. ("Sirona"). The merger of DENTSPLY, the market leader in dental consumables and Sirona, the market leader in dental technology and equipment, creates the world's largest and most diversified manufacturer of professional dental products and technologies. Dentsply Sirona will have leading positions and some of the most well-established brands across consumables, equipment, technology, and specialty products to address the needs of dental professionals, specialists and dental labs. Each day, approximately 600,000 dental professionals will

►Page 2

AMD LASERS®
EFFECTIVE. PRACTICAL. AFFORDABLE. WORLD CLASS LASERS.
#1 Lasers in the World
NEW! PICASSO LITE+
NEW! PICASSO+
GLOBE
step into the future
GLOBE
ADDRESS: 11, EL OBOUR BUILDINGS,
OROUBA AV. HOLIOPOLIS, CAIRO, EGYPT
TELEFAX: +2024045621 - +2024010579
MOB: +2 01000 99 6265
WEBSITE: WWW.GLOBEEGYPT.NET
EMAIL: INFO@GLOBEEGYPT.NET
TAMER DROGUERIE
TAMER DROGUERIE
ADDRESS: BEIRUT-LEBANON
WEBSITE: WWW.TAMERHOLDING.COM
E-MAIL: DENTAL@TAMERHOLDING.COM
PHONE: 961.1.694 000
FAX: 961.1.694 777
DUBAI MEDICAL EQUIPMENT
UNITED ARAB EMIRATES
TEL. NO: +971 6 5308055
FAX NO: +971 6 5308077
MOB : +971 50 7370011
MOB : +971 55 4417490
DT_UAE@EMIRATES.NET.AE
Pride INSTITUTE "Best of Class" TECHNOLOGY AWARD 2015
866.999.2635 AMDLASERS.COM

◂Page 1

use a Dentsply Sirona product.(1) With the largest R&D platform in the industry, Dentsply Sirona will develop and support innovative end-to-end clinical solutions that advance patient care.

Total Solution Provider

By combining DENTSPLY's consumables platform with Sirona's technology and equipment, the new company offers more products and integrated solutions than any other dental organization. Dentsply Sirona's wide array of products for dental professionals and labs enable the treatment of general and specialty procedures including implantology, endodontics, and orthodontics. With the broadest clinical education platform in the industry, the company is driving the adoption of new and approved technology and integrated solutions for more efficient workflows. Customer service and satisfaction will remain a key value to the new company and will be supported by the industry largest sales and service infrastructure comprised of direct sales and leading distributors.

Two Innovation Drivers coming together

The merger unites the two leading innovators in dental, each with over 100 years of experience. Combined, Dentsply Sirona will have largest and strongest R&D platform with over 600 experienced scientists and engineers to foster the development of better, safer and faster dental care. With its enhanced commitment to innovation, the company will advance patient care, improve the patient experience and reduce chair time for procedures.

Jeffrey T. Slovin, Chief Executive Officer of Dentsply Sirona comments: "With our merger complete, Dentsply Sirona can now focus its efforts on empowering dental professionals to provide better, safer and faster dental care. As The Dental Solutions CompanyTM, we will drive long-term growth by being uniquely positioned to deliver innovative solutions and support our customers with the broadest product portfolio and the largest sales and service infrastructure in the industry. Dentsply Sirona will continue to be at the forefront of the digitization of dentistry, single visit dentistry and improving clinical outcomes for patients around the world."

Great results are a combination of the right tools and the right skills. Dentsply Sirona offers the largest clinical education platform in the industry – the goal is to equip dental professionals with everything they need: from the best available products to expert-led clinical education to support the use of these products and services to improve patient care and treatment outcomes. Bret W. Wise, Executive Chairman of Dentsply Sirona, adds: "This is a transformational day for Dentsply Sirona and the entire dental market. Our unparalleled offering of some of the most trusted brands in consumables, equipment and technology makes Dentsply Sirona the partner of choice to dental professionals and labs today. With an unmatched commitment to investing in research, product development and clinical education, Dentsply Sirona will advance patient care and improve oral health on a global scale for years to come."

Merger Close

DENTSPLY and Sirona completed their merger on February 29, 2016. Shares of Sirona will be halted from trading prior to the open of the NASDAQ stock market and will cease trading effective at the close of business today. Under the terms of the merger agreement, Sirona shareholders are entitled to receive 1.8142 shares of Dentsply Sirona for each existing Sirona share. DT

Dentsply Sirona
Sirona Straße 1
5071 Wals bei Salzburg, Austria
T +43 (0) 662 2450-588
F +43 (0) 662 2450-540
www.dentsplysirona.com

IMPRINT

GROUP EDITOR
Daniel ZIMMERMANN
newsroom@dental-tribune.com
Tel.: +44 161 223 1830

CLINICAL EDITOR
Magda WOJTKIEWICZ

ONLINE EDITOR
SOCIAL MEDIA MANAGER
Claudia DUSCHEK

EDITORIAL ASSISTANTS
Anne FAULMANN
Kristin HÜBNER

COPY EDITORS
Sabrina RAAFF
Hans MOTSCHMANN

PUBLISHER/PRESIDENT/CEO
Torsten OEMUS

CHIEF FINANCIAL OFFICER
Dan WUNDERLICH

CHIEF TECHNOLOGY OFFICER
Serban VERES

BUSINESS DEVELOPMENT MANAGER
Claudia SALWICZEK-MAJONEK

JUNIOR MANAGER BUSINESS DEVELOPMENT
Sarah SCHUBERT

PROJECT MANAGER ONLINE
Tom CARVALHO

EVENT MANAGER
Lars HOFFMANN

EDUCATION MANAGER
Christiane FERRET

INTERNATIONAL PR & PROJECT MANAGER
Marc CHALUPSKY

MARKETING & SALES SERVICES
Nicole ANDRÄ

EVENT SERVICES
Esther WODARSKI

ACCOUNTING SERVICES
Karen HAMATSCHEK
Anja MAYWALD
Manuela HUNGER

MEDIA SALES MANAGERS
Matthias DIESSNER (Key Accounts)
Melissa BROWN (International)
Antje KAHNT (International)
Peter WITTECZEK (Asia Pacific)
Weridiana MAGESWKI (Latin America)
Maria KAISER (USA)
Hélène CARPENTIER (Europe)
Barbora SOLAROVA (Easten Europe)

EXECUTIVE PRODUCER
Gernot MEYER

ADVERTISING DISPOSITION
Marius MEZGER

DENTAL TRIBUNE INTERNATIONAL
Holbeinstr. 29, 04229 Leipzig, Germany
Tel.: +49 341 48 474 302
Fax: +49 341 48 474 173
www.dental-tribune.com
info@dental-tribune.com

DENTAL TRIBUNE ASIA PACIFIC LTD.
Room A, 20/F
Harvard Commercial Building
105–111 Thomson Road, Wanchai, HK
Tel.: +852 3113 6177
Fax: +852 3113 6199

THE AMERICA, LLC
116 West 23rd Street, Ste. 500, New York
N.Y. 10011, USA
Tel.: +1 212 244 7181
Fax: +1 212 244 7185

DENTAL TRIBUNE MEA EDITION EDITORIAL BOARD
Dr. Aisha SULTAN ALSUWAIDI, UAE
Dr. Ninette BANDAY, UAE
Dr. Nabeel HUMOOD ALSABEEHA, UAE
Dr. Mohammad AL-OBAIDA, KSA
Dr. Meshari F. ALOTAIBI, KSA
Dr. Jasim M. AL-SAEEDI, Oman
Dr. Mohammed AL-DARWISH, Qatar
Prof. Khaled BALTO, KSA
Dr. Dobrina MOLLOVA, UAE
Dr. Munir SILWADI, UAE
Dr. Khaled ABOUSEADA, KSA
Dr. Rabih ABI NADER, UAE
Dr. George SANOOP, UAE
Dr. Olivier CARCUAC, UAE
Dr. Ehab Heikal, Egypt
Aiham FARRAH, CDT, UAE
Retty M. MATTHEW, UAE

PARTNERS
Emirates Dental Society
Saudi Dental Society
Lebanese Dental Association
Qatar Dental Society
Oman Dental Society

DIRECTOR OF mCME
Dr. Dobrina Mollova
mollova@dental-tribune.me
Tel.: +971 50 42 43072

DIRECTOR
Tzvetan Deyanov
deyanov@dental-tribune.me
Tel.: +971 55 11 28 581

DESIGNER
Kinga Romik
k.romik@dental-tribune.me

PRINTING HOUSE
Al Nisr Printing
P. O. Box 6519, Dubai, UAE

SMALL CHANGE.
BIG DIFFERENCE.

The new imaging plate scanner XIOS Scan completes the intraoral family from Sirona. Whether you're taking the first steps into the digital world or establishing or updating a fully digital practice, XIOS Scan and XIOS XG Sensors offer perfectly synchronized solutions for every-workflow. **Enjoy every day. With Sirona.**

THE NEW IMAGING PLATE SCANNER:
XIOS Scan

SIRONA.COM

The Dental Company

sirona.

Efficient & Easy Dentistry

3M Saudi Arabia Roadshow, January, 22-26 2016

By 3M

3M has always been and remains a company which is staying at the forefront of customer education. On January, 22-26 3M Oral Care Solutions Division in Saudi Arabia held a 4-day 3M Health Care Academy Roadshow covering 4 major cities in the country with participation of 2 leading speakers in esthetic dentistry Dr. Carlos Sabrosa (Brazil) and Dr. Paul Nahas (Lebanon).

The Roadshow started in Jeddah and then continued in Taief, Riyad and Al Khobar. During these 4 days over 850 dentists from both private and governmental clinics of Saudi Arabia attended the event. 3M Company also had an honor to host Dr. Mohammed Al Rafee, General Director of Dentistry of the Ministry of Health of Saudi Arabia.

The event was designed around Efficient and Easy Dentistry, exposing dentists to the different procedure solutions from 3M which will make dentistry really efficient and easy for them. The program covered posterior restorative procedure solutions, especially focusing on the newly launched Filtek™ Bulk Fill Posterior Restorative material. It also covered different techniques of posterior indirect restorations right from the core buildup, retraction, automix impressions, temporization and final placement of the restorations with various cements, shedding light on the different solutions that 3M has to offer in this area.

The program consisted of the combination of lectures and hands-on workshops. Dr. Carlos Sabrosa covered Indirect Procedure topic and Dr. Paul Nahas focused on Posterior Restorative Procedure.

There is a large variety of steps to be followed to achieve success. Understanding the concept makes it easy to apply the use of modern materials. The lecture of Dr. Sabrosa was providing the evidence-based requirements that should be followed such as tooth preparation design and tooth surface topography, core build-ups, provisional restorations, impression materials and techniques, cements and adhesive cementation.

Knowing that dentists always seek for better materials with easier manipulation, faster hardening, low shrinkage or low stress, combined with an excellent esthetic outcome, Dr. Nahas shared his experience on techniques related to bulk fill composite restorations using either open or close sandwich technique. He also talked about the properties of the materials used, the advantages, indications and the difficulties that dentists may face during the posterior restoration creation.

Fig. 1. Indirect Procedure hands-on workshop. Dr. Sabrosa and Dr. Mohammed Al Rafee, General Director of Dentistry of Ministry of Health.

Fig. 2. Dr. Sabrosa with the Roadshow participants

Fig. 3. Dr. Carlos Sabrosa and Dr. Paul Nahas at the opening of the Roadshow

The Roadshow was highly appreciated by the attendees who told that both lectures and workshops from both speakers were relevant to their daily practice and offered easy and effective techniques using innovative 3M products to solve challenges they face.

About the lecturers

Dr. Carlos Sabrosa is an Associate Professor of the Department of Restorative Dentistry at the University of the State of Rio de Janeiro Dental School, Brazil. He received his DDS from the University of the State of Rio de Janeiro Dental School and the Clinical Advanced Graduate Studies (CAGS) Degree in Prosthodontics from Boston University Goldman School of Dental Medicine, USA. Dr. Sabrosa also received his Master of Science and Doctor of Science Degrees in Prosthodontics/Biomaterials from Boston University Goldman School of Dental Medicine, USA. He has a private practice, focused in Oral Rehabilitation and Implantology, in Lebon, Rio de Janeiro, Brazil.

Dr. Paul Nahas graduated from the Lebanese University, Beirut. He received his post-graduate degree in fixed and partial removable prosthodontics in France at the University of Claude Bernard, Lyon. He is the chairperson of the Esthetic and Restorative Dentistry department at the Lebanese University. DT

New 3M Oral Care Products and Solutions at AEEDC 2016

Fig.1. Demo-session on impression materials with Dr. Rasha Ahmed

By 3M

On 2-4th of February 3M Company took part in AEEDC 2016, one of the leading dental exhibitions in the Middle East and Africa. The newest products and technologies for dental and orthodontic professionals were presented at 3M booth, which became the area of active customer interaction and engagement during all three days of the exhibition.

3M Oral Care booth was designed to provide the most comprehensive information about the newest 3M products and technologies to the dentists and orthodontists which came from various parts of Middle East and Africa Region. Exciting customer journey included testimonial, educational and entertainment areas filled with various interactive activities.

At the product testimonial areas experienced 3M specialists were sharing information about the new and existing products for the Direct and Indirect dental procedures, solutions for Preventive and Pediatric treatment, innovative technologies for Orthodontic practice. Doctors could perform a test-drive of a new Elipar™ DeepCure S curing light and assess quality of cure of the most modern Filtek™ composites for anterior and posterior restorations, get precise impressions or carry out hydrophilicity test with Impregum™Penta™ polyether and Express™ A-silicone automix impression materials.

At the educational area of the booth doctors could attend rich scientific program consisting of lectures and demo-sessions on the new dental and orthodontic products held by 3M Oral Care Scientific Affairs and Education experts. Dental professionals had opportunity to learn more about fast and efficient posterior restorations with Filtek™ Bulk Fill Posterior Restorative, stress-bearing class I and II restorations with new Ketac™ Universal Glass Ionomer material, discover how to create highly esthetic restorations with Style Italiano technique using Filtek™ Z350XT nano-composite restorative material, or discuss reliable cementation techniques using variety of RelyX™ cements with Dr. Rasha Ahmed, Scientific Affairs and Education Expert from 3M Gulf. High interest of the doctors was also attracted by the discussion about direct and indirect procedure efficiency using signature 3M restorative and prosthodontic products.

And during orthodontic sessions Dr. Ahmed Basyoni, MEA Scientific Affairs and Education Manager, shared peculiarities of work with Clarity™ Advanced Ceramic Brackets, new Victory™ Series Superior Buccal Tubes and APC™ Flash-Free Adhesive Coated Appliance System.

After the educational activities guests could rest in the comfortable lounge area or take photos with their colleagues next to the 'Wall of Fame'. And at the area for customer feedback visitors were willingly sharing their experience of working with 3M dental and orthodontic products, providing new ideas how to strengthen customer interaction and were simply expressing their positive emotions writing their wishes and words of appreciation!

During the three exhibition days more than 4,000 customers visited 3M Oral Care booth. Among them over 250 doctors took part in 20 presentations and live demonstrations. And those doctors who couldn't attend the event could afterwards watch an interview about 3M educational activities which Dubai TV took with Dr. Rasha Ahmed.

In addition to the exhibition part traditionally 3M held pre- and post-conference workshops for the dentists coming from various countries of Gulf Region. On the February, 1 Dr. Nabil Outaik (Canada) carried out lecture and workshop for Pediatric dentists and on the February, 5 Dr. Ajay Juneja (UAE) held lecture and workshop on Indirect Aesthetic Veneers.

3M Science. Applied to Life. DT

For more information please visit www.3MGulf.com/espe

Fig.2. 3M Oral Care Team at AEEDC

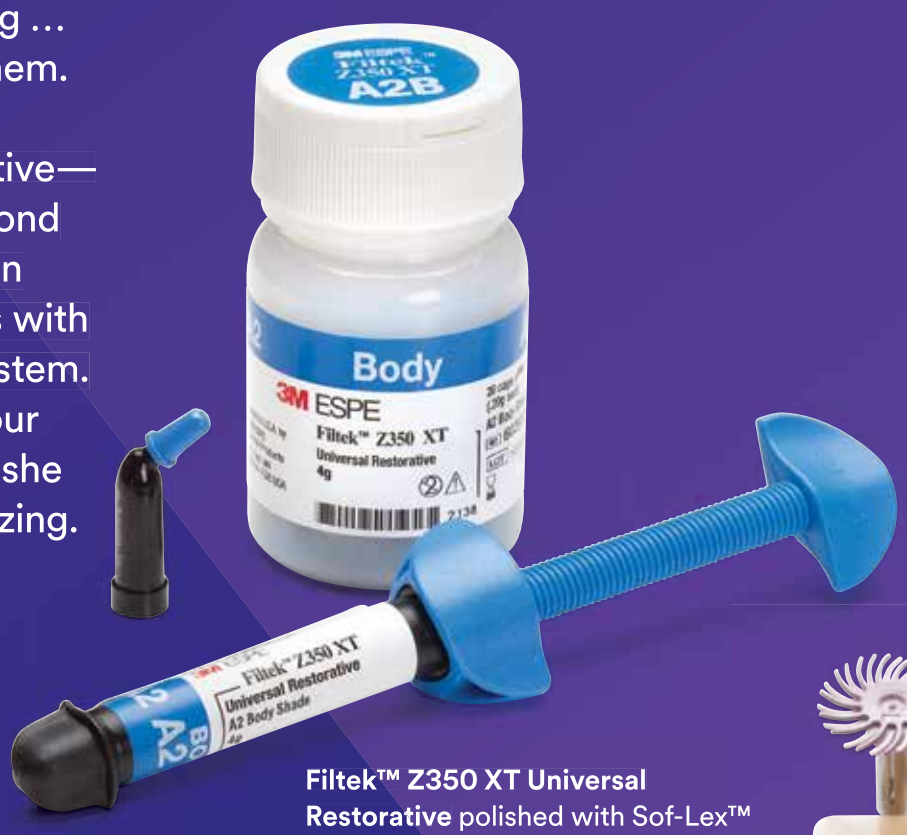
Fig.3. Dr. Angelo Putignano with the 3M Team

3M Science. Applied to Life.™

A beautiful smile she can't wait to share.

There are things in life worth sharing … and now, her smile can be one of them. Restore with beautifully strong Filtek™ Z350 XT Universal Restorative—and polish with the Sof-Lex™ Diamond Polishing System. Together, they can produce a diamond paste-like gloss with the convenience of a rubberized system. Oh, don't be surprised if word of your great work gets around … because she shares everything she thinks is amazing.

www.3MGulf.com/espe



Filtek™ Z350 XT Universal Restorative polished with Sof-Lex™ Diamond Polishing System (left) vs. TPH Spectra® Universal Composite polished with Enhance® Finishing System and PoGo® Polishing System (right).

3M, ESPE, Filtek and Sof-Lex are trademarks of 3M or 3M Deutschland GmbH. Used under license in Canada. © 3M 2016. All rights reserved.

Innovation award for Monobond Etch & Prime

Self-etching glass-ceramic primer impresses thousands of users

By Ivoclar Vivadent

SCHAAN, LIECHTENSTEIN: Monobond Etch & Prime is the first self-etching glass-ceramic primer in the world. First presented at IDS 2015 in Cologne, it has since won over many users. Now it has received an innovation award.

Ivoclar Vivadent is the first dental manufacturer to develop a material that successfully etches and silanates glass-ceramic surfaces in one single step. It is for this reason that Monobond Etch & Prime is considered an innovation. The primer has enjoyed great popularity on the market since it was introduced because it eliminates the need for etching contact surfaces with unpopular hydrofluoric acid.

Presentation of the Innovation Award for Monobond Etch & Prime. From left to right: Uwe Jerathe, Pluradent AG, Norbert Wild, Ivoclar Vivadent Germany, and Dr Marion Marschall, DZW.

Chosen by the dentists' vote

Several thousand dentists took part in a poll to vote on the most innovative products of the year to be awarded an innovation award launched by a German dental dealer and a dental newspaper. By a wide margin, the participants selected Monobond Etch & Prime for first place in the "Materials and Instruments" category. Just over 20 per cent of the votes cast in this category were given to the Ivoclar Vivadent product. In total, twenty products that were first presented at IDS 2015 were put forward for selection in the different categories.

Meeting customer needs

"We are delighted and proud to see that Monobond Etch & Prime has received several innovation awards so soon after having been launched," says Armin Ospelt, Head of Global Marketing at Ivoclar Vivadent AG (Liechtenstein). "The awards show us that we meet the requirements of our customers, as has already been demonstrated by the market success of the product."

Fig. 1: Monobond Etch & Prime has already won over many users

Monobond® is a registered trademark of Ivoclar Vivadent AG. DT

Contact Information
Ivoclar Vivadent AG
Bendererstrasse 2
9494 Schaan/Liechtenstein
Tel.: +423 235 35 35
Fax: +423 235 33 60
E-mail: info@ivoclarvivadent.com
www.ivoclarvivadent.com

E.M.S. Dental presents GUIDED BIOFILM THERAPY during AEEDC in Dubai

EMS booth team

By E.M.S.

The Swiss company E.M.S. Electro Medical Systems who is the innovator of Piezon® and AIR-FLOW® technologies and a global leader in dental prophylaxis as well as Guided Biofilm Therapy participated at the 20th edition of AEEDC from 2nd to 4th of February 2016. AEEDC takes place annually in the International Convention and Exhibition Center in Dubai and represents a very important platform within the Gulf and Middle-East countries for E.M.S.

The main focus of E.M.S. during AEEDC was to promote the importance of Biofilm Management with the message BYE BYE BIOFILM and its newest product, the AIR-FLOW® powder PLUS, an advanced powder based on erythritol and a very fine particle size of 14 microns which allows treatments both above and below the gingival margin.

After three exhibition days, Hans Obermeier, Area Sales Manager of E.M.S. in the Middle East, was very satisfied with the results of AEEDC.

"Our booth was much better frequented than last year. This clearly shows that the understanding for the importance of professional and regular tooth cleaning is growing in the Gulf and Middle-East countries and that the clinicians are looking for support in education, technologies and protocols to improve their service for the patients."

Hans Obermeier underlines as well the interest amongst the practitioners of the live-demonstrations of the different E.M.S. products realized by the clinical expert Dr. Neha Dixit which attracted a large audience.

Since September 2015, the company Al Hayat is the exclusive agent of E.M.S. in UAE. DT

Contact Information
Al-Hayat Pharmaceuticals U.A.E.
312 Al Wahda Street, Office no. 101
4483 Sharjah, UAE
Mobile: +971 50 6352496
Telephone: +971 6 559 2481
Fax: +971 6 559 3573
Email: alhayat@eim.ae
Web: www.alhayatuae.com

Researchers find varying patterns for sealant treatment recommendation

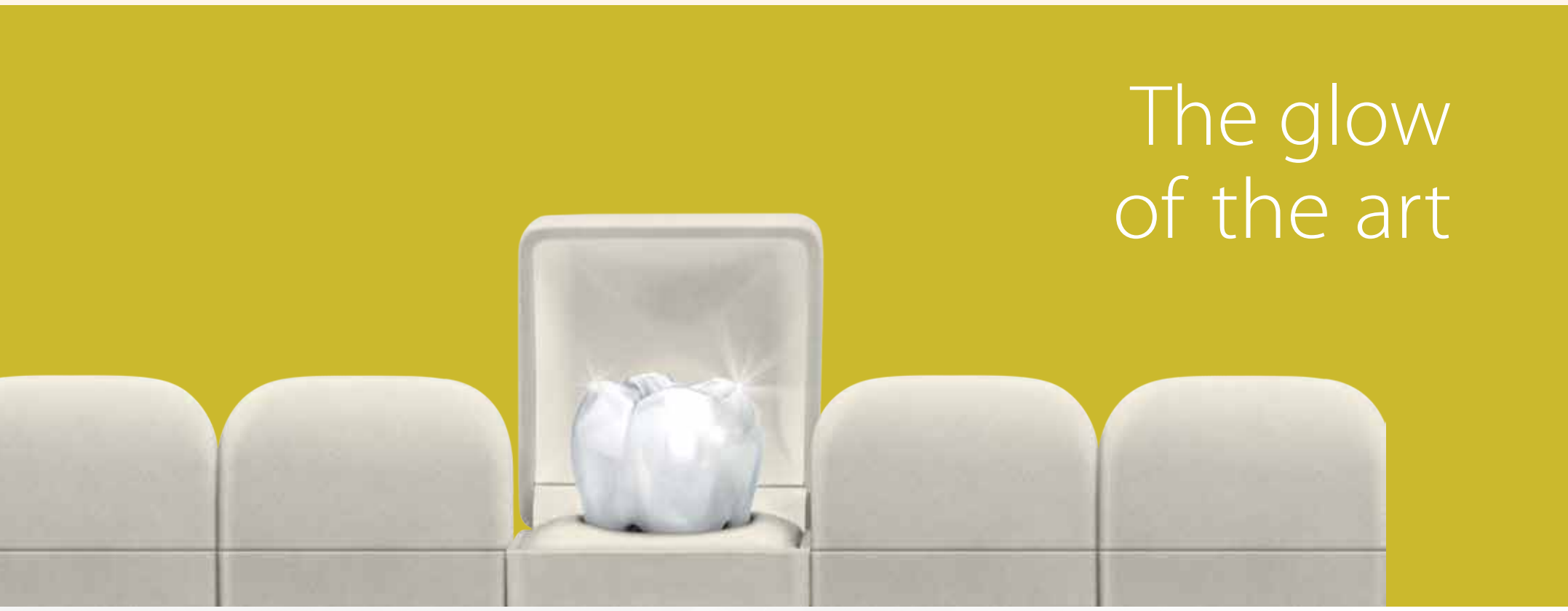
By DTI

KITAKYUSHU, Japan: Japanese researchers have examined dentist practice patterns regarding the recommendation of dental sealants for treatment and identified characteristics associated with this recommendation. They found that these patterns vary widely. According to the researchers, recommending a sealant was significantly related to the dentist having a greater belief in the effectiveness of caries risk assessment.

In the study, the researchers surveyed 189 dentists recruited from the Japanese Dental Practice-Based Research Network regarding the treatment decision in the case of a 12-year-old patient with a high caries risk via a cross-sectional questionnaire. The participants were presented with a series of clinical photographs of the occlusal surface of a mandibular first molar portraying increasing depths of cavitation.

For the hypothetical scenarios, the dentists' recommendations of sealants varied from 16 to 26 per cent. Nineteen per cent of the dentists recommended sealants in the absence of dark brown pigmentation. Forty-eight per cent of the dentists recommended sealants to more than 25 per cent of patients aged 6–18. An analysis of the responses suggested that the dentist's belief in the effectiveness of caries risk assessment was significantly associated with the percentage of patients who would receive sealants.

Dr Naoki Kakudate from Kyushu Dental University first presented the study, titled "Evidence-practice gap for sealant application: Results from a Dental PBRN", at the 45th Annual Meeting and Exhibition of the American Association for Dental Research, which was held from 16 to 19 March in Los Angeles in the US. DT



Checklists not just for pilots anymore

ADA C·E·R·P® | Continuing Education Recognition Program
Centre for Advanced Professional Practices (CAPP) is an ADA CERP Recognized Provider. ADA CERP is a service of the American Dental Association to assist dental professionals in identifying quality providers of continuing dental education. ADA CERP does not approve or endorse individual courses or instructors, nor does it imply acceptance of credit hours by boards of dentistry.
CAPP designates this activity for 2 CE Credits.

mCME articles in Dental Tribune have been approved by:
HAAD as having educational content for 2 CME Credit Hours
DHA awarded this program for 2 CPD Credit Points

By Patti DiGangi, RDH, BS, Judy Bendit, RDH, BS

With popularity of the television show "Mad Men," 1960's themes such as war, racism and sexism are memorialized, as are once-common habits such as smoking. Women were marketed in the 1960s with their own cigarette brand that had the catch phrase, "You've come a long way, baby." Following release of Smoking and Health: Report of the Advisory Committee to the Surgeon General of the United States,[1] all smoking-related advertising was banned from TV in 1970.[2]

Sit-down dentistry also evolved in the 1960's. "You've come a long way, baby" is gone from advertising, but it remains an accurate slogan when it comes to ergonomics in dentistry. We have come a long way, but for many dental professionals, that's still not far enough.

In 1937, pilots developed the concept of the checklist after planes began crashing. Dental professionals may not be crashing in the literal sense, but many clinicians have been forced into early retirement because of musculoskeletal disorders (MSD) or they continue to try to work through them. By incorporating a checklist concept similar to that used by pilots, dental professionals can be more successful, productive — and able to practice without pain.

Pain in dentistry

Pain of dentistry is a common fear that keeps patients away from the dental office. Pain in dentistry is common, but has nothing to do with the patient. The individuals having pain in dentistry are the practitioners. It is estimated that more than half of practitioners have some kind of painful musculoskeletal disorder that is work related.[3]

In 2007, the Center for Health Workforce, funded by the American Dental Hygienists' Association (ADHA), conducted a sample survey of licensed dental hygienists about a wide variety of issues, including occupational injury or illness related to their work. It was reported that just more than one-third (33.8 percent) indicated had experienced an occupational injury or illness. Figure 1 shows the types and percentages of occupational injury or illness experienced. More than half (53 percent) used medication to control the discomfort and nearly half (49.5 percent) indicated they had shortened their work hours as a result of their injury or illness.[4]

Ergonomics evolved as a recognized field during World War II. It is the science of adjusting the work environment to the worker.[5] The Occupational Safety and Health Administration (OSHA) has links to ergonomic information.[6] The American Dental Association (ADA) published Introduction to Ergonomics[7] with suggested interventions and in 2011 published Ergonomics for Dental Students.[8] The ADA website has an ergonomics section with links to fliers about specific problems.[9] Even with numerous articles and C.E. courses (both in person and online) on ergonomics in the five years since the ADHA survey, MSDs continue to escalate. Much of this is because of a hand-me-down mentality in many dental offices.

Fig. 2. Steve Knight at LeMans. Today, as a business turnaround specialist, Knight brings lessons from racing to dentistry. His goal is to turn around the world of seating for dental hygienists and all dental professionals. (Race photos/Provided by Steve Knight)

Fig. 3. Steve Knight at Laguna. In racing, perfect driver ergonomics is critical. Knight's Goldilocks theory applies to a dental practice using existing seating simply because it was already there: Sometimes it's too tall or too short, and no matter how much it is adjusted, it is still not just right.

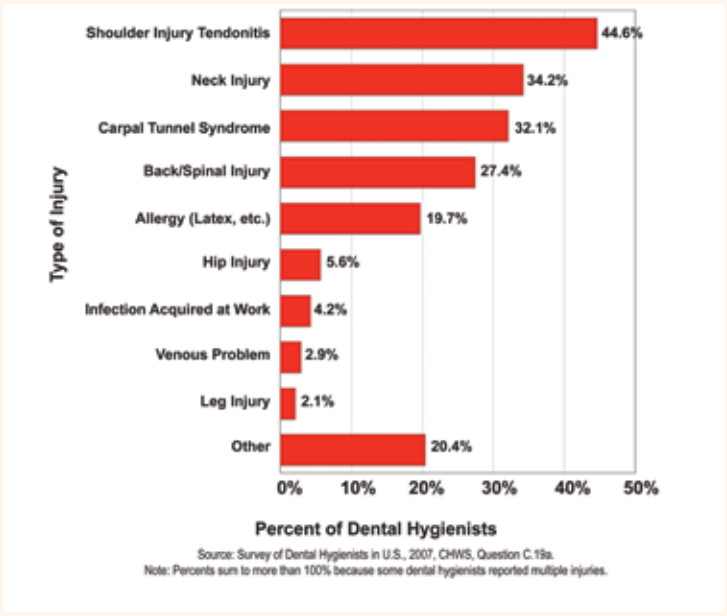


Fig. 1. Type of occupational injury or illness experienced by dental hygienists with employment-related injury or illness, 2007.3 (Chart/ Provided by the Center for Health Workforce and American Dental Hygienists' Association)

Checklists help find the way

In the days of early aviation, pilots were crashing because they could not reach the controls. Investigators found it was pilot error as the cause. Pilot error doesn't necessarily mean the pilot did something wrong; it can mean the pilot wasn't familiar with the equipment or the equipment didn't match the pilot. For those who work in a temporary dental situation at multiple offices, ergonomic challenges are huge. When such practitioners walk into a new office, trying to match their individual needs to the available equipment is nearly impossible.

Pilot checklists were developed to match the steps needed for the job, making sure that everything is done and nothing is overlooked. Checklists have become fundamental to the aviation industry.[10] In a similar way, checklists should become fundamental to the dental industry.

Two books, "The Checklist Manifesto: How to Get Things Right"[11] by Dr. Atul Gawande, a surgeon, and "Safe Patients, Smart Hospitals"[12] by Dr. Peter Pronovost, discuss checklists as an effective way to reduce medical errors. These books are not just about the checklists, they are about the culture of medicine and how the checklist can foster better teamwork. Checklists are starting to become common in some hospital settings, but not nearly common enough. It takes a change of culture to adopt something that on the surface can seem so simple — as a core strategy for enhancing care.

A recent success story illustrates the difference checklists can make in medicine. The intensive care unit (ICU) at a hospital is a crucial part of health care delivery and one of the most complex and expensive. The Centers for Disease Control (CDC) reported that nearly every patient admitted to an ICU experiences some type of complication during his or her stay.[13] Checklists were used in the Michigan Keystone Project to make patient care safer in more than 100 ICUs in Michigan. The project targeted the expensive and potentially lethal catheter-related bloodstream infections that cost $18,000 when a patient contracts one and causes 24,000 deaths per year. The Keystone team made a checklist, measured infection rates — and changed hospital culture. There was a 66 percent reduction in this type of infection statewide, saving more than 1,500 lives and $200 million in the first 18 months of the program.[14] It was the combination of checklists and the culture of teamwork that made the difference.

Race car drivers and race cars take quite a beating during a race, both physically and mechanically. Like pilots, race car drivers and their teams use checklists. The teamwork of a pit crew during a race is artistry to watch that is fostered by checklists. Steve Knight, once a professional Le Mans race car driver (Figs. 2 and 3) and business turnaround specialist, has taken lessons from racing and brought them to dentistry. His goal is to turn around the world of seating for dental hygienists and all dental professionals.

Seating risk factor checklist

Before Knight got into a Le Mans car there were many considerations to be addressed. An impression of the driver's body is taken to ensure a perfect fit into the seat of the car for optimal performance. This molding created: proper leg-stretch to reach the clutch, accelerator and brake; comfort in reaching and holding the steering wheel; and most important, the ability to sit comfortably for long periods of time while driving around the race course. Success for a top-level race car driver is driven by a strict regimen for eating, exercise and nearly all activities of daily life so they can be in top shape physically. It is the total package, including the racing team and pit crew all using checklists, that creates this success.

The idea of a form-fitting chair for dental practitioners might not be practical, yet think of the possibilities. Those same ideas can be brought into the treatment rooms with the "Seating Risk Assessment Checklist" shown in Table 1. This checklist helps to evaluate overall balance. Many professionals have damaged themselves by repeatedly sitting, leaning, stretching and twisting for so many years. As Cindy Purdy, RDH, BS, consulting with Crown Seating recently said to an online group, "Changing stools alone will not treat medical issues, but it can certainly offer benefits for the future."[15]

Recline/incline seating

Passengers are required to sit upright at take-off and landing on any plane (Fig. 4). Most passengers can't wait to hear the announcement that the cruising altitude has been reached so the seats can be leaned back for more comfort. Unfortunately, dental professionals tend to sit in this upright position all day. When seated in this position for long periods of time, practitioners both elongate and shorten different muscle groups in the legs. Humans are not meant to sit completely upright and especially not for a long day in the office. [16]

A more comfortable sitting position for most is in a reclined position (Fig. 5). Think of your comfortable recliner in front of the television after a long day of work or the experience sitting in a first-class seat on a plane. Reclining is so very comfortable. This is the way race car drivers sit; but it's not very practical for treating dental patients.

Now take that reclined position and rotate the torso on its axis to create the inverse position, called an inclined position[17] (Fig 6). Incline is the automatic position created when sitting on a horse or a saddle stool. It is a more balanced position. This balance helps preserve the hips and spine in the proper position. It is defined as an open body position that is more comfortable, less harmful and allows for proper lumbar cur-

▸Page 9

◂Page 8

vature. The pelvis rotates downward and forward, enabling the knees to stay below hip level. This creates less stress and strain on the back, neck and shoulder muscles. A slight incline of the seat (5-15 percent) is ideal. If you adjust more than 20 percent out of a neutral position for an extended period of time, muscle imbalances are created, which means the muscles are adaptively shortening on one side and elongating on the other. This results in misalignment of the spine and joints, and in this case, the hip joint. When a person sits properly on a saddle seat, the pelvis is properly positioned and stabilized, so the body naturally and automatically assumes the least-stressful position.

Static vs. dynamic seating

For sitting positions, there are two more checklist considerations. In traditional chairs, the practitioner sits in a static position that does not provide much movement or stimulation of the muscles. A new term has been given to some of the advanced-design chairs: dynamic seating. The dynamic chair offers the option of movement, allowing the muscles to both contract and relax while one remains seated. Prolonged muscle contraction results in increased pressure of the blood vessels in the muscle, creating a decreased blood flow through the muscle. Blood flow assists in the repair and health of the muscles by delivering oxygen to the muscle and removing waste products in the muscle that might otherwise cause localized, intense pain (ischemia). A dynamic chair allows a period of rest and rebuilding for the muscles needed for healthy seating. In some dynamic stools the seat pan moves; with others it's the seatback that moves forward and backward as you move; and, with some, all parts of the chair move. In any case, these chairs help strengthen the body's core.

Seating materials

A chair can be made of rubber, plastic, leather, mesh or other man-made materials that may or may not breathe. These materials can make a difference in comfort depending on where you live. In the South, or if there is high humidly in the office, a practitioner might complain about the material of the seat. If there is sweating while sitting, the seat may not allow the legs and back to breathe. This can be uncomfortable and/or embarrassing. Asking the manufacturer about options for breathability is the best choice. There are new fabrics that control odor and stain-causing bacteria.

With or without arms

Many practitioners wonder if they should or shouldn't have arms on their chairs. The answer depends on how that individual works. If the person's arms are always flapping in the breeze because the patient isn't seated back properly, then arms on the chair will not help. It is imperative for the patient to either lay back in the appropriate position, or the practitioner must stand. One suggestion is instead of saying "Ok, let's put the chair back and get started," the practitioner says, "Let's put the chair back and get both of us comfortable."

They are very similar phrases with very different meaning. Patients are not the only ones who need to be comfortable; the best work can happen when everyone is comfortable. How many times during the day do practitioners stop to get comfortable? Usually none. Health care providers often worry more about patient comfort and end up compromising themselves all day long, leading to pain and injury.

Goldilocks theory of seating

Chairs are often inherited from someone else when first employed in a different practice. Steve Knight's Goldilocks™ theory is like the old story, sometimes it's too tall or too short and no matter how much it is adjusted, it is still not just right. Not getting that just-right position will lead to pain and other issues. Many companies can exchange the cylinder in a stool, for different heights to make it just right. Checking with the supplier or the manufacturer of the stool is the best way to find out if the cylinder can be changed to create a better fit. The important lesson is: Don't just try to live with it; it hurts the practitioner, the patients, and eventually, the practice's bottom line.

Considering alternative seating may be the best choice. Creating a checklist for buying a new chair (Table 2) can help you find the best one for your needs. A new chair may be needed because some chairs can't be jerry-rigged enough to fit. Other issues also play a part. Some patient chairs are extremely wide, or our patients can be very broad. This can make it impossible to work close enough when seated in a traditional stool. The saddle stool allows much closer access to the patient, so tasks can be accomplished with less stress. The professional should not have to reach more than 15 inches. The light, instruments on the bracket tray, the handpieces, the computer or anything needed for patient care should be within arms-reach. Straining for items stresses the muscles in the neck and shoulder. The biggest culprit is the overhead light. A headlight attached to loupes is no longer a choice; it is a necessary part of a healthy ergonomic armentarium.

Checklists and the culture of teamwork

Hospital checklists are saving lives and money. Pilots use several different checklists for every flight to prevent pilot error and crashes. Winning race car teams and race car drivers use checklists for every race. Dentistry can use checklists to great benefit as well. We've come a long way, yet dentistry still has a way to go. It won't happen without a change of culture. First, the problem must be recognized, hopefully before there is serious damage.

Dental professionals know that before there is a cavity, before there is periodontitis, before there is oral cancer; there is a risk for a cavity, periodontal disease and oral cancer. Preventive care and early detection is the purpose of routine hygiene care. Half or more of those reading this article already have MSDs; the other half are probably accumulating damage but haven't reached critical mass to experience symptoms.

Dental professionals are caring individuals who don't have to hurt themselves to help others. Ultimately not sitting comfortably hurts the practitioners, the patients and the practice bottom line. With simple ergonomic seating checklists professionals can be more successful at practicing in a pain-free environment.

Fig. 4. Traditional upright seating: Notice how this causes a stretching in the thigh muscles. (Drawings/Provided by Crown Seating)

Fig. 5. Reclined seating

Fig. 6. Inclined seating

References

1. The 1964 Report on Smoking and Health. National Library of Medicine. 1964. Available at: www.profiles.nlm.nih.gov/ps/retrieve/Narrative/NN/p-nid/60.
2. Nixon signs legislation banning cigarette ads on TV and radio. Time Magazine. April 1 1970. Available at: www.history.com/this-day-in-history/nixon-signs-legislation-banning-cigarette-ads-on-tv-and-radio.
3. Nonfatal Occupational Injuries and Illnesses Requiring Days Away From Work, 2010. U.S. Department of Labor, Bureau of Labor Statistics. Available at: www.bls.gov/news.release/osh2.nr0.htm.
4. Survey of Dental Hygienists in the United States Executive Summary. American Dental Hygienists Association. 2007. Available at: www.adha.org/downloads/DH_pratitioner_Survey_Exec_Summary.pdf.
5. Weerdmeester, B. Ergonomics for Beginners: A quick reference guide. 2008. CRC Taylor & Francis.
6. Hazard Recognition, Control and Prevention. Occupational Safety & Health Administration. Available at: www.osha.gov/SLTC/dentistry/recognition.html.
7. An Introduction to Ergonomics: Risk Factors, MSDs, Approaches and Interventions. A Report of the Ergonomics and Disability Support Advisory Committee to Council on Dental Practice American Dental Association. 2004. www.rgpdental.com/pdfs/topics_ergonomics_paper(2).pdf.
8. Ergonomics for Dental Students. American Dental Association. 2011. Available at: www.ada.org/sections/educationAndCareers/pdfs/ergonomics.pdf.
9. Ergonomics. American Dental Association Alliance. Available at: www.ada.org/4500.aspx.
10. Schamel, J. How the Pilot's Checklist Came About. January 1, 2011. Flight Field Service History. Available at: www.atchistory.org/History/checklst.htm.
11. Gawande, A. The Checklist Manifesto: How to Get Things Right. New York: Metropolitan Books, 2010.
12. Pronovost, P., Vohr, E. Safe Patients, Smart Hospitals: How One Doctor's Checklist Can Help Us Change Health Care from the Inside Out. Penguin Group, 2011.
13. Checklist for Ergonomic Risk Factors. PMA.org. Available at: www.pma.org/osha/docs/wsc-checklist.pdf.
14. Scott II, R. The Direct Medical Costs of Healthcare-Associated Infections in U.S. Hospitals and the Benefits of Prevention. March 2009. Centers for Disease Control and Prevention. Available at: www.cdc.gov/HAI/pdfs/hai/Scott_CostPaper.pdf.
15. Pronovost P, Needham D, Berenholtz S, Sinopoli D, Chu H, Cosgrove S, Sexton B, Hyzy R, Welsh R, Roth G, Bander J, Kepros J, Goeschel C. An intervention to decrease catheter-related bloodstream infections in the ICU. N Engl J Med. 2007 Jun 21;356(25):2660. Available at: www.nejm.org/doi/full/10.1056/nejmoa061115#t=articleTop.
16. Purdy, Cindy. "Ergonomics" e-mail. E-mail to AmyRDH group. August 14, 2012.
17. Gilkey, D. Occupational Ergonomics Certificate. 2012. Available at: www.ramct.colostate.edu/webct. DT

Judy Bendit, RDH, BS, Patti DiGangi, RDH, BS. *They are national speakers who created and present Creating a Flight Plan Beyond the Routine. The one-of-a-kind program includes topics such as electronic health records, risk assessment, instrumentation and ergonomics to name a few. They are presenting "Flight Plan: Checklists" in its new format during the Yankee Dental Congress, www.yankee-dental.com, in January. Contact DiGangi at pdigangi@comcast.net or Bendit at JZBeducate@aol.com.*

Things to look for	Questions to ask yourself
Prolonged hunched or elevated shoulders	Are your feet able to touch the ground?
Twisting head to side	Can you work in your patient's mouth comfortably?
Elbow flexed for long periods	With your arms comfortably by your side?
Wrists extended or flexed for long periods	Can you reach your instruments easily?
Prolonged sitting, especially in one position	How do you feel after one hour?
Lumbar back area not supported	How do you feel after two hours?
Feet dangling, not well supported	How do you feel by the end of the day?
Posture that puts pressure on the back of the thighs	Does your back sweat while sitting? Do your legs stick to the chair from sweat?
Twisted torso	Headache?
Frequent, prolonged leaning or reaching	Neck ache?
Neck extended backwards, head titled back	Leg numbness?
Neck severely flexed downward	Back pain?

Table 1. Seating Risk Assessment Checklist (Table adapted from the Occupational Safety and Health Administration's 'Checklist for Ergonomic Risk Factors')

Questions to ask
Does the seat pan fit your shape?
What kind of height adjustments does it have?
What kind of lumbar support?
Does the chair have at least five coasters?
Is the chair static or dynamic? Which is best for the individual?
Does the seat pan decline?
How will this chair fit with the patient chair?
Does the company have fabric options?
Is the fabric breathable? Is it odor or stain resistant?
Does the manufacturer offer an opportunity to try it for a few days before you buy it?

Table 2. Checklist for buying a new chair

mCME SELF INSTRUCTION PROGRAM

CAPPmea together with Dental Tribune provides the opportunity with its mCME - Self Instruction Program a quick and simple way to meet your continuing education needs. mCME offers you the flexibility to work at your own pace through the material from any location at any time. The content is international, drawn from the upper echelon of dental medicine, but also presents a regional outlook in terms of perspective and subject matter.

Membership

Yearly membership subscription for mCME: 900 AED
One Time article newspaper subscription: 250 AED per issue. After the payment, you will receive your membership number and allowing you to start the program.

Completion of mCME

- mCME participants are required to read the continuing medical education (CME) articles published in each issue.
- Each article offers 2 CME Credit and are followed by a quiz Questionnaire online, which is available on www.cappmea.com/mCME/questionnaires.html.
- Each quiz has to be returned to events@cappmea.com or faxed to: +97143686883 in three months from the publication date.
- A minimum passing score of 80% must be achieved in order to claim credit.
- No more than two answered questions can be submitted at the same time
- Validity of the article – 3 months
- Validity of the subscription – 1 year
- Collection of Credit hours: You will receive the summary report with Certificate, maximum one month after the expiry date of your membership. For single subscription certificates and summary reports will be sent one month after the publication of the article.

The answers and critiques published herein have been checked carefully and represent authoritative opinions about the questions concerned.

Articles are available on www.cappmea.com after the publication.
For more information please contact events@cappmea.com or +971 4 3616174

FOR INTERACTION WITH THE AUTHORS FIND THE CONTACT DETAILS AT THE END OF EACH ARTICLE.