Columbia University announces breakthrough in tooth regeneration

Stem-cell-infused scaffold holds potential for replacing dental implants

Daniel Zimmermann

NEW YORK, USA/LEIPZIG, Germany: Dental implants could soon become a secondary choice for replacing natural teeth. According to new research from the College of Dental Medicine at Columbia University in New York, three-dimensional scaffolds infused with stem cells yield an anatomically correct tooth in as soon as nine weeks once implanted. The new technique, developed by Columbia University Prof. Jeremy Mao, has also demonstrated the potential to regenerate periodontal ligaments and alveolar bone, which could pave the way for re-growing natural teeth that are able to integrate into the surrounding tissue.

Previous research on tooth regeneration has focused on culturing stem cells directly on dental implants to improve osseointegration or outside the body, in which case the tooth is grown orthotopically.

“Mao’s technique, which has been tested on animal models, moves the cultivation process directly into the socket where the tooth can be grown orthotopically. “A key consideration in tooth regeneration is finding a cost-effective approach that can translate into therapies for patients who cannot afford or who aren’t given good candidates for dental implants,” Dr Mao told Dental Tribune Asia Pacific. “Our findings represent the first report of regeneration of anatomically shaped tooth-like structures in vivo.”

Latest studies from Sweden have demonstrated that bone loss, one of the main reasons for dental implant failure, remains a challenge for dental clinicians. Dr Mao’s study was published in the recent edition of the Journal of Dental Research and will be presented at this year’s International Association of Dental Research congress in Barcelona. Columbia has announced that it has patient applications on file regarding the engineered tooth. Inactively seeking partners to help commercialise the technology through its technology transfer office, Columbia Technology Ventures.

Filipinos claim salary upgrade

The Filipino government has been called on to include public school dentists and assistants in the next update of the Salary Standardization Law III in July. The legislation, signed by President Gloria Macapagal-Arroyo last year, aims to standardise basic salaries, allowances, benefits and incentives for 1.5 million government employees. It also secures the annual increase of public salaries until 2013.

Currently, more than 700 public school dentists and assistants work in the Philippines, treating a population of 21 million, according to the Department of Education Dentists’ Association. Their main tasks are to observe and maintain educational standards in India and abroad.

Dentistry in India faces regulation

The Minister for Health and Family Welfare in India, Ghulam Nabi Azad, has announced legislation seeking to establish a new government-run agency to replace all existing regulatory bodies, such as the Medical Council of India (MCI) and the Dental Council of India (DCI). Their main tasks are to observe and maintain educational standards, such as the Medical Council of India (MCI) and the Dental Council of India (DCI). Their main tasks are to observe and maintain educational standards in India and abroad.

Currently, health-related professions in India are represented by a number of regulatory bodies, such as the Medical Council of India (MCI) and the Dental Council of India (DCI). Their main tasks are to observe and maintain educational standards in India and abroad.

Corruption charges against the incumbent heads of the DCI and the MCI have recently placed pressure on the government to institute reform of the country’s existing regulatory system.
Patients in Malaysia go on record

HONG KONG/LEIPZIG, Germany: Malaysia Healthcare, a medical tourism facilitator in Malaysia, is offering a medical record storage device to foreign medical tourists and domestic patients who wish to go abroad for treatment. The individual Personal Health Electronic Record (IPHER) device, which is produced by a US company based in Florida, is able to carry basic patient data, such as blood type, allergies and dental records. It allows medical professionals to access a patient’s medical history quickly.

Physicians and dentists in Malaysia and most Asian countries are currently not required to store their patient’s medical data in digital format. Malaysia Healthcare is the first provider to offer such a service to patients in places without Internet connectivity, he added.

Digital storage of medical records is increasingly becoming big business in the health care sector as broadband Internet becomes available in more parts of the world. Computing companies like Microsoft and Google already offer web-based platforms that can store and exchange medical records and data. But data protection specialists, however, have warned against the massive outsourcing of medical record transcription and storage, which has the potential to violate patient-physician confidentiality by allowing unauthorised persons access to critical patient data.

Japanese students lack interest in private dental schools

TOKYO, Japan: Enrolment in private dental schools in Japan has decreased again during spring term, a survey by the Japanese Association of Private Dental Schools has found. Figures released by the organisations last month show that almost 70 per cent of the schools missed their intake quota. The total number of students who wrote entrance examinations for private dental colleges was 4,318, a sharp fall from over 10,000 in 2006.

The institution that suffered most from the lack of new students was Ohu University in Koriyama, Fukushima Prefecture, which only had 52 new students enrolled for a quota of 96, according to the survey. Matsumoto Dental University in Shinjuku, Nagano Prefecture, had 55 students enrolled compared with its quota of 80, while the School of Dentistry at the Health Sciences University of Hokkaido in Tobetsucho, Hokkaido, enrolled only half of its 96-student quota.

Private dental schools in Japan have been struggling to attract a sufficient number of students in recent years because the dental workforce in the country has increased significantly in the last 20 years, despite stable total dental care costs. In 2008, Japan had 96,000 dentists compared with only 71,000 in 1998, according to figures from the Ministry of International Affairs and Commerce.

Dental experts said the drop in the number of private dental institution applicants suggests that fewer young people have a positive image of dentistry as a lucrative and desirable profession. They pointed out that if the trend continues, private dental colleges and schools will not be able to select students with sufficient academic quality.

Asia News
HONG KONG/LEIPZIG, Germany: Students at the Hwa Chong Institution in Singapore are currently investigating the adhesive properties of barnacles for use in dentistry. Their research, which received a Gold Award at this year’s Singapore Science and Engineering Fair, may offer a new means of attaching dental braces or cementing cavities in teeth.

Barnacles are marine invertebrates that live in shallow or tidal waters. They attach themselves permanently to hard substrate like rocks or ships with the help of a protein-based adhesive, called barnacle cement. Shipping companies spend millions every year to remove massive accumulations of these animals, which can slow down ships and increase fuel consumption.

Worldwide, more than 1,220 barnacle species have been identified. The students explored bio-compatibility, speed of polymerisation and acid resistance in the cement secreted by a barnacle species called Amphibalanus amphitrite. They found that the cement is water insoluble and has strong mechanical properties, but is safe for humans to use in the mouth. The researchers observed, however, that the cement lacks resistance to long-term exposure to strongly acidic conditions. Its adhesiveness was compromised by acidic substances, such as orange juice and soda, they said.

The team, which is supported by the National University of Singapore, is now working with a new experimental design that can better simulate oral conditions in humans. If successful, the outcome could also be beneficial for other medical applications, such as joining bones in surgery.

HONG KONG/LEIPZIG, Germany: Dr Hisashi Hisamitsu from Japan was recently appointed President of the Asian Academy of Aesthetic Dentistry (AAAD). The 62-year-old dentist from Kawasaki City succeeds Dr Sim Tang Eng from Malaysia, who has served as President for the last two years. Dr Hisamitsu is currently Chairman of the Department of Clinical Cariology and Endodontology at Showa University School of Dentistry in Japan.

The presidency takeover took place at the AAAD meeting in Kuala Lumpur in May. In addition, Dr Wang Guang Hu from China has been appointed President-Elect. He will be elected President at the next AAAD meeting, which will be held in 2012 in Japan. The AAAD General Assembly also appointed Dr Takashi Nakamura from Japan as General Secretary.

AAAD meetings take place every two years. This year’s gathering, with the theme High Definition Aesthetic Dentistry, drew 549 delegates to Kuala Lumpur. It was organised jointly with the Malaysian Association of Aesthetic Dentistry and offered well-known speakers in the field including Drs Mauro Fadum (Italy), Didier Detschi (Switzerland), and Bruce Mathis and Rhys Spoor (USA), who also conducted two hands-on workshops at the University of Malaysia.

Sea animals could cement cavities

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“IT’S AN EASY DECISION.”

Shigeo Kataoka, Dental Technician, Japan.

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### Dental Tribune Asia Pacific Edition

**Opinion**

**“Finally, our rotten teeth are good for something.”**

By Daniel Zimmermann

By the time you are finally holding this edition of DT Asia Pacific in your hands, the first matches of the FIFA 2010 World Cup will have already been played. For four weeks in June and July, the eyes and minds of billions of people around the world will turn to South Africa in hope that their team will win the world's most coveted trophy in sports.

Unfortunately, the word hope cannot be applied to the host country itself. South Africa, though still one of the Black Continent's most advanced nations, remains a deeply divided and troubled nation with problems that even the best organised World Cup will not be able to erase from the political and social landscape any time soon. The lack of oral health care is just one of the minor problems in the country.

According to the latest figures from UNAIDS, almost 6 million or 12 percent of the South African population is living with HIV/AIDS. The mortality rate linked to the disease has doubled from slightly over 500,000 in 1997 to over 1,000,000 in 2009. This has been caused by the availability of such anti-retroviral drugs as梯. The government in Pretoria has announced a National Strategic Plan to fight the spread of HIV/AIDS and TB and to increase testing as well as HIV/AIDS awareness amongst the population until 2011. For the success of this campaign, the country will also need support from outside its borders. The tournament can help raise awareness but only if the world is willing to not only watch for the winning goal, but also look beyond the pitch and at the millions of people suffering in the townships of Durban, Cape Town and Johannesburg.

We will try to keep our eyes open.

Yours sincerely,

Daniel Zimmermann
Group Editor
Dental Tribune International

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**Transperdentistry, the need of the hour in India**

By Dr Ashok Dhoble
Hon-Secretary General
Indian Dental Association

The Indian government recently announced a single regulatory body for professional education in the country that will oversee professions related to medicine, dentistry, pharmacy, public health and allied health sciences. Its function will be to coordinate the entire gamut of medical and health education, which hitherto was done by independent bodies such as the Dental Council of India (DCI).

The main task of the DCI has been to ensure maintenance of uniform standards of education, grant professional recognition and permission to establish new colleges, supervise and monitor the activities of dental colleges, approve additions to courses and student intakes, and, above all, regulate the dental profession.

Management of the independent bodies has been a cause of public criticism and judicial censure. Evidently, there is an urgent need for innovation in health education. Corruption charges have been laid, but these are allegations that need to be proved. The current system lacks transparency in all matters, and in dealing with public more transparency is required. Corruption, whatever its extent, needs to be dealt with severely and heavy punishment apart from dismissal should be meted out. This calls perhaps for a change in the legal system.

Whatever the regulatory body, it should be managed by experts of high calibre and integrity, independent of government control, with the good of the country and community in mind. Whether a single body would be able to address the challenges of the various professions remains to be seen, but this can only be determined through investigation and experimentation.

The new regulatory body, wherever it is established, is not expected to effect miracles. But if it is staffed by those with integrity, honesty and a commitment to public health, it will prove beneficial to the community.

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**Oral health and care in South Africa**

By Prof Sudeshni Naidoo
South Africa

Despite great achievements in the oral health of populations globally, problems remain in many communities around the world. The decline of oral diseases in industrial countries means that the burden of oral diseases can be prevented and controlled with fairly simple interventions. Advances in knowledge and technology and preventive interventions in health can virtually eliminate the pain, suffering and loss of quality of life that accompany oral diseases. In South Africa, the availability of such advances is not universal. The distribution and severity of oral disease varies in different parts of the country.

A recent survey found that almost a fifth of the South African population reported oral-health problems and this relatively high level of perceived oral-health problems implies that oral health should be of greater priority. Furthermore, levels of edentulousness are unacceptably high and of factors of accessibility, affordability and the type of services provided. Difficulties pertain to: (i) the structure and management of oral-health services in most of the provinces; (ii) the dentist-driven public oral-health services; (iii) the palliative and demand-driven nature of the services; (iv) inequities in oral health care in the provinces; and importantly (v) the mainly urban location of oral health-care services.

In South Africa, optimal intervention in relation to oral disease is not universally available. Reducing disparities requires far-reaching, wide-ranging approaches that target at-risk populations regarding specific oral diseases, and involves improving access to existing care.
“Automated external defibrillators should be present in every health-care environment”

An interview with Dr Morton Rosenberg, USA, about medical emergencies in the dental practice

Rather than use the term outdated, it is important to understand that preparing for a medical emergency is an evolving standard of care. One of the major changes has been the availability and use of automated external defibrillators (AED), which should be present in every health-care environment. The American Heart Association 2005 guidelines have placed early defibrillation as an integral part of the Basic Life Support (BLS) ‘chain of survival’ for the treatment of cardiac arrest. The immediate availability of an AED has been demonstrated to increase the success of resuscitation.

In the US, some states (Florida, Washington, Illinois) have mandated the presence of an AED in dental offices.

Dentists must always be prepared to manage medical emergencies, which are most likely to occur during and after local anaesthesia. Although studies have found that most of these complications are mild, around 10 per cent of all incidences should be considered serious. Recently, an updated list of emergency medications and equipment for dental providers, including an emergency preparedness checklist, was developed by Dr Morton Rosenberg of Tufts University School of Dental Medicine in the United States.

Dental Tribune Asia Pacific spoke with Dr Rosenberg about the list and the importance of the training of dental staff.

Dental Tribune Asia Pacific: Medical emergencies in dental offices are rare but likely to happen at some point during a dentist’s career. Have the types of medical emergencies changed in the last couple of years?

Dr Morton Rosenberg: Although it is very difficult to gather data on this topic, the perception of most experts is that the incidence of medical emergencies is increasing in the dental office. The types of medical emergencies are still centred on the cardiovascular and respiratory systems.

What are the reasons for the increase?

We have an ageing population and we are now treating elderly patients with comprehensive dental needs using techniques that did not exist 15 years ago. Additional reasons include the growing use of prescription drugs, herbal supplements, and recreational drugs—all have the potential of interacting with each other and interacting with the many drugs dentists now administer, including the popularity and growth of all forms of sedation.

You recently published a new strategy guide on medical emergencies in dental offices. Do you consider the current knowledge outdated?

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In the US, some states (Florida, Washington, Illinois) have mandated the presence of an AED in dental offices.
In your opinion, are dentists and dental staff today adequately prepared for most medical emergencies?

Many offices have purchased basic emergency equipment, but it is the combination of a dentist and staff well trained and current in Basic Life Support for Healthcare Providers (BLS-HCP) that will make a difference in outcome. Every office should have the capability, at a minimum, of being able to deliver oxygen under positive pressure. What medications should be available to manage the more common emergencies? Oxygen should be in stock, as well as epinephrine, diphenhydramine, nitroglycerine, a bronchodilator, glucose, aspirin and aromatic ammonia. These medications should also be checked regularly to ensure they have not passed their expiration dates. Allergic reactions to certain types of medication are an increasing problem in clinical settings. What medications do you consider problematic in this respect?

Without a doubt, antibiotics are always at the top of the list of medications that are administered to many patients in the course of dental treatment and which have the potential of being a trigger for a host of allergic reactions. It is also important for the dentist to know that an increasing number of patients have allergic reactions to latex. What types of equipment do you recommend? The equipment that should be readily available includes a portable E cylinder of oxygen, oral pharyngeal airways, as well as devices for the administration of supplemental oxygen, including a bag-valve-mask. I further recommend Magill forceps, an AED, a stethoscope, a sphygmomanometer and a wall clock with a second hand.

Proper risk assessment and documentation could prevent many of these medical emergencies. What are the first indications that identify a high-risk patient? It is only through a detailed medical history, a thorough review of the positive responses by the dentist, focused physical examination and vital signs, and appropriate consultations that patients at high risk for medical issues during dental procedures can be identified.

What are the best strategies for prevention? The hallmarks of a well-prepared office are meticulous preoperative assessment, appropriate and basic emergency equipment, patients and staff current in BLS-HCP. Constant review and, most importantly, unannounced drills will make the office immediately able to recognize, call for help, and address the immediate needs of the dentist with a medical emergency. Thank you very much for the interview.
Help for Haitian dentists still lacking, HDA president says

Javier M. de Pisón
DT Latin America

PUERTO VALLARTA, Mexico: The President of the Haiti Dental Association (HDA), Dr Samuel Prophete, told Dental Tribune Latin America that people are working again and that his country has begun functioning to some extent, but that large tent cities remain, posing great sanitation and security problems.

Dr Prophete participated in the conference held as part of the A Smile for Haiti initiative of the Ibero-Latin American Dental Federation thanks to a grant from the International Congress of Oral Implantologists and specifically to the efforts of its Latin American Director, Dr Alvaro Ordóñez from Miami.

Two months after DT Latin America brought Dr Prophete to the Chicago Midwinter Meeting for talks with the Chicago Dental Society and American Dental Association officials on ways to help Haitian dentists, little aid has trickled down to the Haitian dental community. Asked about the reaction of his colleagues to the campaign for Haitian dentists, he said that after the trip to Chicago he called a meeting to explain the commitments to help made by American dental organisations. “I told them, ‘I cross my fingers and wait for the resources to come’, but for the time being I’m selling hope to them.”

Dr Prophete said his association will use the initial aid received to help the 12 dentists most affected by the earthquake, the ones who lost everything, of the 35 dentists in need of help.

“Haitian dentists have partnered to work together with the ones who have lost their practices,” Dr Prophete said. “This has allowed dentists to survive, but they are still waiting” for aid from several dental organisations and other sources in the dental industry.

Looters ransacked dental offices after the earthquake, leaving many professionals without tools or materials. While institutions such as New York University College of Dentistry have donated dental chairs that are being shipped to Haiti by Henry Schein, Dr Prophete said that more immediate help could be obtained by purchasing equipment or materials from Haitian dental pots for Haitian dentists.

Dr Prophete pointed out that this is an important way for dentists to gain supplies to tend to their patients’ needs and it keeps the economy moving forward for Haitians. There is a real concern that dentists who cannot work in Haiti will migrate, leaving a country with already very low rates of dental services in an even worse situation.

Donations
If you want to send donations to your colleagues in Haiti please use the following bank details:

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For donations in kind, such as used dental equipment, please contact Dr Samuel Prophete at samprophete@gmail.com.
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"Dentistry nowadays has become a field of constant technological challenge"

An interview with Guido Bartels, Sales Fellas, Germany

Dental Tribune Asia Pacific: Mr Bartels, recent market surveys show that the dental industry appears to have defied the global recession. Have we finally overcome the crisis?

Guido Bartels: In the past, this industry has been one of the industries first affected by changing consumer behaviour and decreasing investments. At the same time, the industry also been the first to recover from a crisis. However, we must not forget that even in economically challenging times, the dental industry in Germany, for example, is strongly supported by the public-health insurance system. This will definitely change in the future. Owing to the demographic shift in our societies, existing social security systems will be altered, leaving individuals with greater responsibility regarding their health. This development will possibly influence the outcome of future crises.

What conclusion should the industry draw from the crisis?

Change always entails the recognition of new opportunities. The industry has visibly been on the road to change in recent years. At first, this change happened gradually, mainly because previous metal manufacturers tried their utmost to keep their dominant position in the market against alternative ceramic materials. There are a number of new materials available now, especially ceramics, that can make the production of dental prosthetics more cost-effective in the long run. Similar to other industries, dentistry nowadays has become a field of constant technological challenge in implementing innovative thinking for technically advanced solutions. Considered product concepts and cost reductions are only one side of the coin. Paradigms concerning consumer loyalty and service have to be revisited, as the way we communicate and gather information in our society has changed dramatically through the Internet.

Mergers and acquisitions have become part of daily business in dentistry. Are we experiencing market concentration?

In this regard, while the dental industry is a latecomer, it will not be able to escape this global market trend. Once again, the main reason for this is the constant availability of goods and services through the Internet. The resulting increase in international economic competition has become a driving factor behind thought patterns not only in production processes, but also in consumer expectations. This trend cannot be halted and will be further driven by concentrated development of promising business concepts.

Should companies focus on their core competencies in the current situation or invest in additional, rather unfamiliar product segments?

Business concepts focusing on core competencies will always be successful in the long run. Other competencies that are controllable through good management, however, can be bought in through business acquisitions or mergers. The latest examples from the industry demonstrate that companies with all-in-one solutions can be successful and that the market is open to their offerings.

Significant investments are flowing into the digital manufacturing of dentures. Is this a novel market potential, and will traditional production processes be replaced?

While other industries have already undergone similar developments, we are experiencing only the beginning of a new development chain. Centralised and low-cost production will have a significant effect on dental industries in the long run. Apart from digital imaging and CAD/CAM technologies that are already available, there will be a trend toward medium-sized and large production centres that will replace the laboratory next door.

Many dental companies have announced large investments in the Asian market. Is the market potential really high?

In terms of market potential, India and China indeed offer enormous business opportunities. Therefore, you can expect some prominent acquisitions of international brands and companies by Chinese manufacturers. However, when you consider the market potential in Asia you have to remember that it is often difficult to gain access to these markets because of differences in culture and consumer behaviour. Often, importing goods there entails costly registration processes, which means that small and medium-sized companies are reluctant to enter these markets.

Thank you very much for the interview.

(Translation provided by Annemarie Fischer)
The social revolution
Networking sites offer a great means of promoting your dental practice

Mhari Coxon
UK

Imagine if you would, a time when there were only three analogue television channels—closing before midnight, no mobile phones and no home computers. The World Wide Web was unheard of. Letters had to be posted. That was my childhood. If you had told me I would be on Facebook this time last year, I would have laughed, told you I didn’t have enough time and refused to consider it.

I only learnt to use predictive text last year, thanks to the patience of a 14-year-old patient—though I still haven’t come to grips with shorthand text much to the amusement of my friends. They say I send books not texts.

Thankfully, our wonderful administrator (also my husband) set up a profile for me as the company and a page for us as CPDforDCP Ltd on Facebook last year. Six months on, we have more than 1,900 friends and it has allowed us to interact with dental professionals all over the country and produce courses tailored to their needs. Some of our courses are never advertised off Facebook, as they are filled up directly from there.

Listening to our friends in the business and being part of groups has given us an insight into which direction we should be heading in our 2011 planning—all of this from the comfort of my own living room with a cup of tea in hand.

Facebook offers information and answers: there is a list of instant information at your fingertips and if you don’t know where to look, you can ask one of the many groups, such as Dental Nurse Network or UK Dental Hygienists. On Facebook, someone invariably knows the answer or connects you to someone or some business that does. Many forms of CPD (free and otherwise) are recommended and links posted to these are available to everyone.

I have had conversations with oral surgeons from Israel, special needs’ dentists from Germany and found many great articles through the groups’ suggestions. On the site, business coaches offer advice, and other businesses support each other. Perhaps I am starting to make it sound like a commune, but that is because that is what it reminds me of. There is a social side to this too, providing an environment for friendly debate and discussion, and an occasional moan too. There are many fun groups, such as the one that managed to get Rage Against the Machine to 2009 Christmas number one, demonstrating the power of this site.

Not just the little people
The British Dental Health Foundation said the following in a recent press release: “Since introducing the online strategy a little over two months ago, the British Dental Health Foundation has seen traffic to its website increase by more than a staggering 55 per cent.”

“On Facebook, someone invariably knows the answer or connects you to someone or some business that does.”

The Foundation posts a variety of oral-health advice, dental research and industry-based news. Dr Nigel Carter, Chief Executive of the British Dental Health Foundation, is astonished by the speed of its success: “When we first stepped into social networking we hoped that it would bring us closer to the public as another means of getting across good oral health messages. Our plan was long term, to grow a steady following and slowly increase traffic to the website but its growth has already surpassed all that we imagined. We trebled our three-month target within the first three weeks and these figures have continued to rise.”

“We are making new relationships with people of all ages, from all backgrounds on a daily basis—we really have fallen on our feet with it.”

Not just for professionals
There are many dental practices now on Facebook, with their patients as group members, using it to share newsletters, promote the practice and interact in a positive way to develop new business. Companies can talk to their patients directly and much business is conducted through Facebook and other social networking.

There are many forms of social networking that work in a way similar to Facebook: Twitter (am too scared of this site, might like it too much and start boring you all with my food choices and colour of socks—less is more), YouTube (watch out as we are on our way!), my space and many others. There are even companies that will manage these pages for you and your company so you can access your clients in as many different ways as possible.

So come on, join the social revolution in some form, whether to meet colleagues and peers, connect with your existing clients or find new clients, find information, or just to see what all the fuss is about.

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New Colgate® Sensitive Pro-Relief™ desensitizing paste with Pro-Argin™ is **clinically proven to provide instant and lasting sensitivity relief after just one application.**

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Home Remedies for Dentine Hypersensitivity

Hypersensitivity is characterized by short, sharp pain arising from exposed dentin in response to stimuli such as cold, hot, sour or sweet food and drinks, air (cold weather) or pressure and cannot be ascribed to any other dental disease. The cause of hypersensitivity is loss of enamel on the tooth crown and gum recession exposing the tooth root (Figure 1). Dentine is generally covered by enamel in a tooth crown and by a protective layer called cementum in the tooth root surrounded by gum. Dentine contains thousands of microscopic tubular structures that radiate outwards from the pulp. Loss of enamel can occur as a result of aggressive and incorrect tooth brushing, over consumption of acidic food and excessive tooth grinding. Gum recession may occur due to aggressive and incorrect tooth brushing, aging, gum diseases and certain dental procedures. The cementum on the exposed tooth root will then easily be removed and dentine is exposed resulting in dentine hypersensitivity.

Diagnosis is Important
Dentine hypersensitivity may share similar symptoms with dental decay and gum disease, hence, it is essential to consult a dentist when you suffer from pain of similar nature. In addition, the cause of dentine hypersensitivity should be identified and a diagnosis by exclusion must be made for dental hypersensitivity, ruling out other conditions requiring different treatment. Once the diagnosis of dentine hypersensitivity is confirmed, the dentist may discuss with you regarding decreasing the intake of acid-containing foods, and show you correct brushing techniques.

Home Management with Desensitizing Toothpaste
Traditional beliefs of gargling warm water with salt and biting ampalaya (bitter fruit) and medications for pain relief often cannot eliminate dentine hypersensitivity. Use of desensitizing toothpaste is considered by many as the "first option" recommendation. Some desensitizing toothpastes contain potassium salts to interrupt the neural response to pain stimuli. It is effective but often takes 4 to 8 weeks for pain relief. Other desensitizing toothpastes contain strontium salts to occlude open dentinal tubules from external stimuli associated with dentine hypersensitivity. Certain patients, however, do not find it effective. New desensitizing toothpastes with arginine and calcium carbonate (Arginine-CaCO₃) that occludes and blocks open dentinal tubules, are now available in the market. Our study on 390 adult patients with dentine hypersensitivity demonstrated significant pain relief after using professional desensitizing paste with Arginine-CaCO₃. The new Colgate® Sensitive Pro-Relief™ desensitizing toothpaste containing Arginine-CaCO₃ and fluoride is developed for routine daily use.

References:
Home Remedies for Dentine Hypersensitivity

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Pro-Argin™ Technology, comprised of arginine and an insoluble calcium compound in the form of calcium carbonate, is based on a natural process of tubule occlusion. It plugs open tubules to help block the pain sensations.

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- Clinical studies demonstrated significantly greater sensitivity reduction with twice daily brushing compared to control toothpaste with potassium ions
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- Contains the Pro-Argin™ Technology as in the Colgate® Sensitive Pro-Relief™ Desensitizing Paste

Colgate® Sensitive Pro-Relief™ Toothpaste for the daily oral care of sensitive teeth

6 Docimo R et al J Clin Dent 2009; 20 (Spec Iss): 137-143

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"Dental caries is...not easily prevented or treated in the most susceptible children"

An interview with Prof. Jill Fernandez and Drs Neal Herman and Lily Lim, New York University, USA

Early Childhood Caries (ECC) has increased not only in the US, but also worldwide. Should this area be considered a new priority in paediatric dentistry?

Prof. Jill Fernandez: ECC, and efforts in the intervention and treatment of early dental decay, has always been a major priority. In order to combat the current national epidemic of ECC in young children effectively, a more comprehensive, collaborative approach to the education of parents by all new-born and paediatric health-care providers, such as nurses, paediatrician and general dentists, dental hygienists, paediatricians, paediatric nurse practitioners, obstetricians and gynaecologists, is essential.

The American Academy of Pediatrics (AAP) began a collaborative effort with paediatric dentists to address the issue of ECC. The AAP has made strides in developing educational programmes for paediatricians and family physicians to identify at-risk children and refer them for dental treatment.

However, for many children access to dental care remains a problem and the number with dental caries seems to be growing. Many parents do not have dental insurance; thus, they postpone dental treatments until the problem is so advanced that it can no longer be ignored. It is unfortunate that even parents who have third-party coverage for dental care (Medicaid, Child Health Plus) and are from lower socioeconomic backgrounds often fail to seek dental care as part of general health-care services. As a result, pre-school children with Medicaid may still have untreated decayed teeth.

Frequent bottle-feeding at night has been identified as a driving factor for ECC. Other studies have found a microbiological connection between mother and child, labelling ECC as a transmissible disease. What is your opinion on the latest research and how will it affect the way children should be treated?

Dr Neal Herman: The nursing bottle is only one of many confounding factors in ECC. What we conclude from the latest research is that dental caries is highly complex and perplexing, not easily prevented or treated in the most susceptible children. It is believed these days that there are nutritional, behavioural, immunological and bacterial factors that must be considered in order to understand and prevent dental caries.

The surgical approach to ECC—the ‘drill and fill’ solution of placing restorations in teeth as the first step—is no longer the only or appropriate treatment. A permanent tooth is a lifetime, and gutta-percha fits the bill. The ideal root-canal filling material for primary teeth should resorb at a similar rate to the primary root in order to permit normal eruption of the successor tooth; not be harmful to the underlying tissues or to the hard structure of the tooth for functional or cosmetic purposes.

Anatomical and physiological differences between primary and permanent teeth make a difference to the principle of root-canal treatment. A permanent tooth requires an inert, solid, non-resorbable material that can last a lifetime, and gutta-percha fits that bill. The ideal root-canal filling material for primary teeth should resorb at a similar rate to the primary root in order to permit normal eruption of the successor tooth; not be harmful to the underlying tissues or to the permanent tooth germ; fill the root canals easily; adhere to the walls and not shrink; be easily removed, if necessary; be radiopaque; be antiseptic; and not cause discoloration of the tooth.

There is currently no material that meets all these criteria, but...
the filling materials most commonly used for primary pulp canals are non-reinforced zinc-oxide-eugenol paste, iodoform-based paste (KRI), and iodoform-oxide-eugenol paste, iodoform-canal. A study in the Netherlands has found that prevention involving the counselling of parents on caries-promoting feeding behaviour is often ineffective in the long term. Is there a lack of quality intervention strategies?

Dr Neal Herman: If we (or the WHO) could answer this question, we’d have found the key to unlocking the mystery of improving or enhancing human motivation. It is probably true that without continual and periodic follow-up, counselling will wear off even amongst highly motivated individuals. We think the key lies with education that begins early and promotes a sound nutritional and sustainable oral-hygiene model for parent and child alike. As you might imagine, this is a task not well suited to the traditional dental-care delivery model, and will require some serious paradigm changes to permit effective implementation.

What preventative measures do you recommend based on your clinical experience in New York?

Dr Neal Herman: Preventive measures and conservative therapies that confront the cause of the disease, rather than treat the symptoms, are the most effective and work the best. Fluoride varnish has proven to be a godsend, although most of the evidence to date is empirical and anecdotal. Good long-term longitudinal studies are needed to prove conclusively what we already know as clinicians—an intensive regimen of fluoride varnish, along with adjunctive measures, can control and often reverse dental decay, as well as prevent it.
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Minimally invasive anterior restorations with non-prep veneers

Fig. 1: The patient disliked the gaps in her dentition and wished for the appearance of her teeth to be improved.

Dr Harald Streit & MDT Bernhard Hellmuth Germany

How many people would like their teeth to look more beautiful? And how many of them avoid dental treatment merely because they fear that they have to sacrifice healthy tooth structure to achieve an aesthetic improvement? These questions cannot be answered, of course. However, dentists who have found it difficult to convince their patients of the advantages of corrective dental treatment because they are scared of altering their tooth cut can now offer a conservative alternative in the form of minimally invasive restorations.

Fig. 2: The aesthetic situation was impaired by a gummy smile. The gingival contour was uneven and the teeth appeared barrel-shaped.

Fig. 3: The gingival contour of the two central incisors was harmonised with non-prep veneers. The highly translucent IPS e.max Press offers exceptional stability (Fig. 5).

Precise planning, accurate outcome

The patient’s aesthetic appearance was also impaired by an excessive display of gum tissue (gummy smile). When she smiled, the asymmetrical contours of her gingival tissues became visible. The high dynamics and slanted contour of her lips could not be influenced therapeutically (Fig. 2). Moreover, the teeth appeared barrel-shaped.

Correcting such a situation is unforgiving of mistakes. The treatment has to be planned and performed with absolute accuracy. For this purpose, gum contouring was carried out upon completion of the orthodontic treatment and successful stabilisation of the dentition. Excess gum was trimmed away with a soft-tissue laser and the incisal contours of the two central incisors were harmonised with each other (Fig. 5).

The advantage of laser contouring is that the laser naturally seals the wounds and treatment can be continued soon after contouring. The mirror image shows the situation after one week with a palatal view of the anterior teeth (Fig. 4).

Thin and yet stable

At the next stage, the dental technician in charge determined the final tooth shade with the help of a shade guide and shade samples, taking into account the initial tooth shade, which plays a major role particularly in very thin translucent restorations. Both structures were then joined to create a model with detachable segments. A wax-up was designed on the model to plan and determine the position of the incisal edges. In the process, particular care was taken to extend the incisal edges only minimally. Otherwise, the complication in situ would have given an optical impression of being too long.

Please note that the dental technician should apply no more than two thin coatings of die spacer to the dies. The spacer should be applied only up to 1 mm from the preparation margin in order to avoid hollow restoration margins in the oral cavity.

Thin veneers, as presented in this case, are fabricated by creating a fully anatomical wax-up, which is pressed and then characterised with stains. IPS e.max Press (Ivoclar Vivadent) is ideally suited for this purpose. This material is composed of lithium disilicate glass-ceramic and is 2.5 to 3 times stronger than other glass-ceramic materials. Having a flexural strength of almost 400 MPa, IPS e.max Press offers exceptional stability (Fig. 5). These characteristics convey sufficient strength to veneers, inlays, crowns and similar restorations to withstand comparably high loads. Furthermore, restorations made of IPS e.max Press look impressively beautiful. The product range includes special press inlays, which offer an increased level of opacity for cases in which the underlying ceramic restorations are discoloured. These inlays effectively mask dark areas and provide a natural-looking aesthetic result.

Precedes prescription

In the case presented here, teeth #13 to 23 were restored with non-prep veneers. The highly translucent IPS e.max Press HT...
Fig. 6: Veneers are best contoured in a fully anatomical shape and pressed.—Fig. 7: Thin veneers should have a thickness of at least 0.5 mm in the cervical area and 0.4 mm at the incisal edge.

The technician should strictly adhere to the minimum thickness stipulated for the relevant lithium disilicate glass-ceramic. According to the manufacturer’s directions, the minimum thickness of IPS e.max Press is 0.5 mm in the cervical and labial area, and 0.4 mm at the incisal edge (Fig. 6).

The wax margins are tapered towards the end. The transitions between restoration and tooth structure should be contoured particularly carefully. In this way, the need for later corrections can be pre-empted.

It is well known that inexperienced technicians often find it difficult to create such a thin wax-up and thus tend to create thicker wax-ups. However, it is unnecessary to over-contour the margins as a precaution, as the technician may then have to re-work the restorations after they have been pressed and dried. This takes time. Thus, it is best to contour as suggested by the manufacturer right from the start.

Everything under control

The veneers are pressed in a Programat EP 5000 ceramic press furnace at 920 °C. Upon completion of the press cycle, they are carefully diced—adjustments are kept to a minimum. The sprues are separated with thin diamond disks, whilst the objects are kept moist and cool. The attachment points are smoothed out using light pressure and low speed. Next, the restorations are tried on in the dies of the model, and the contact points, occlusion and articulation are checked. If necessary, the surface texture may be adjusted.

After these steps have been completed, the veneers are carefully blasted using aluminium oxide at minimum pressure and cleaned with steam before they are matched to the tooth shade with IPS e.max Ceram Glaze and Stains and IPS e.max Ceram Shades, individualised and glazed (Fig. 7). They are best tried in with Variolink Veneer Try In pastes. The translucency and shade of these glycerine pastes are identical to those of the polymerised Variolink Veneer luting composite and therefore the composite shade, which provides the least perceptible final result, can already be determined and tested before the veneers are cemented in place.

This try-in is performed to check the aesthetics of the veneers only; the occlusion is not checked at this point. After the try-in, the water-soluble paste is removed from the veneers in an ultrasonic bath and then the veneers are thoroughly dried.

Incorporation

The patient was impressed with the veneers already at the first try-in. Her smile-on (Fig. 8) was an expression of her happiness and the practice team was pleased. The veneers fitted at the first go. The proximal contact points did not require any adjustments. Consequently, the restorations were incorporated immediately.

As a basic principle, ceramic veneers are inserted using an adhesive technique. In preparing them, the inner surfaces were cleaned with water, dried and etched with 5% hydrofluoric acid (for example IPS Ceramic Etching Gel) for 20 seconds and then carefully rinsed and dried. Next, Monobond Plus was applied and allowed to react for 60 seconds in order to achieve the necessary silanisation of the lithium-disilicate veneers.

The patient’s enamel was etched with 57% phosphoric acid for 30 seconds, rinsed with water and then lightly dried. Next, the oral cavity was isolated with a rubber dam.

The veneers were cemented in place using light-curing Variolink Veneer. This translucent luting composite is suited for anterior restorations with a thickness of less than 2 mm. The restorations have to be sufficiently translucent for the luting composite to be effectively light-cured through them. Variolink Veneer is available in a range of shade variations, which cause the restorations in situ to appear brighter or darker. This luting composite ensures a strong bond and high resistance to wear.

We selected Variolink Veneer in the shade Medium Value 0 for the present case, as the shade is neutral and does not have any effect on the brightness of the restoration, and the appropriate amount of luting composite was applied to the bonding surfaces of the restoration and the restoration was placed in situ using light pressure. After the surplus material had been removed, each veneer was light-cured for 5 seconds using a bluephase 28c curing light.

Offering a reliable, high light intensity of 2,000 to 2,200 mW/cm², the Turbo programme eliminates the risk of insufficient polymerisation. The built-in fan ensures a consistently high light intensity. Excess composite material was removed from the margins of the restorations and then the cement joint was polished with a soft silicophone.

Without a doubt, the thinner and more delicate the veneers are, the more difficult it is for the clinician to place them. As delicate and fragile the non-prep veneers presented in this report may appear when they are first delivered, they are highly stable and durable once they have been inserted. The adhesive bond with the enamel ensures a long-lasting high stability and optimal adhesive bond of the restoration in situ.

Looking beautiful

In terms of aesthetics, the treatment of this patient is a complete success. The margins of the restorations are tapered very thinly and are not discernible from the tooth structure even when examined from different angles (Fig. 9). The lower dental arch has been re-shaped as a result of the orthodontic treatment and no longer contains gaps. The upper marginal gingival contour has been corrected to follow a ‘high-low-high’ pattern, which has a decisive effect on the pink-white aesthetics. According to this pattern, the gingival margins are located higher on the upper central incisors than on the adjacent lateral ones, while the margins on the lateral incisors are located lower than on the canines. If these details are not observed, the aesthetic result looks only half as good as it should even if an otherwise excellent restoration is placed.

The restorations reflect the typical characteristics of the natural teeth. Figure 10 shows the beautiful design of the surface texture of the veneers, including their shiny marginal contours. The light is optimally transmitted through the veneers and scattered. The resulting reflections and optical effects impart a natural-looking vibrant appearance.
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to the ceramic veneers. The translucent effect of the lithium disilicate glass-ceramic creates a pleasant chameleon effect; the contact points correlate to one another and the incisal triangles are shaped in a slightly open curve. The gingiva does not show any signs of irritation and it features a healthy stippled surface texture.

These veneers offer a decisive advantage when placing restorations with margins in the visible area. In younger patients in particular, the gum line may recede with increasing age. However, receding gum lines do not present a disadvantage in terms of quality or aesthetics with these restorations, as their margins are invisible.

Conclusion

In the present case, the patient’s expectations in terms of shape, size and shade were optimally met. Her appearance was favourably altered without sacrificing any dental hard tissue. From the current vantage point, non-prep veneers are thus indicated in cases in which misaligned teeth or differences in tooth length negatively affect the appearance of anterior teeth, and preparation is not a necessity. Compared with conventional veneers or crowns, non-prep veneers represent not only a highly aesthetic, but also a minimally invasive treatment option.

Non-prep veneers expand the range of dental treatment options and provide a viable route to meet the patient’s desire for aesthetic improvement, which previously could not be carried out because the resulting loss of tooth structure would have been unacceptable to both the patient and clinician. Hence, this treatment option, which has been used in North America successfully for quite some time and is becoming increasingly popular, is also of interest to young and young-at-heart patients in Europe.

Although the dentist does not need to grind the teeth to place non-prep veneers, the desired result has to be accurately planned and the procedure perfectly prepared. Insertion without guide grooves in particular requires a maximum measure of concentration and sure instinct. Selecting an appropriate material is equally essential. With its exceptional strength, the IPS e.max Press lithium disilicate glass-ceramic is a material suited for this purpose. Once the delicate and fragile-looking ceramic veneers have been adhesively placed in situ, they are durable and stable.

Dr Harald Streit maintains a private practice in Bad Neustadt in Germany. He can be contacted at harald.streit@honestam.de

Bernhard Hellmuth maintains a dental laboratory in Bad Neustadt in Germany. He can be contacted at bh@unikat.dental.de
In May, Apple launched its iPad tablet computer in all major Asian markets. If you still do not know whether to give into the hype, here are some apps that may help you in your practice.

Lexi-Dental complete

With Lexi-Dental Complete, Lexi-Comp offers a full dental library with clinical information that dentists might need for fast diagnosis and treatment. Amongst others, the package includes databases on dental pharmacology and oral diseases as well as implant and oral surgery handbooks. Subscribers have also access to an extensive database of radiographs, illustrations and clinical images. In addition to iPhone/iPad, Lexi-Dental Complete is available for Android, Blackberry, Palm OS and Windows Mobile.

Web: www.lexi.com

MacPractice

This US-based clinical software development firm that provides premium practice management, clinical, and EHR (electronic medical records) software for the Mac has announced a version of their Mac and iPhone solutions for the iPad. First up is a redesigned version of MacPractice Interface 2.0 that allows dentists to access their schedule and patient records store in MacPractice via Wi-Fi or a 3G connection. With the addition of the MacPractice HL7 Interface, doctors will also be able to add new patients and post procedures and diagnoses on the go. Other iPad releases include MacPractice Kiosk and MacPractice Web Interface enabling patients and staff to complete and sign MacPractice EHR forms, such as patient registration, HIPAA release, and medical history. Chairside Dental Chart for iPad and an EMR/EHR app for iPad are also in the works.

Web: www.MacPractice.com/iPad

iPad integration for SIRONA SIDEXIS XG

The SidexisMobilePlugin software from Reinke Software Engineering, Germany, is now available for the iPad. According to the manufacturer, the plugin supports the full resolution of Apple’s new device and offers full details in all kind of SIDEXIS dental images. Switching from the exam display to individual dental images will allow dental practitioners to present even smallest details to their patients.

Web: www.sidexisplugins.com

DDS GP

This universal iTunes app aims to offers dental practitioners a new way in patient consultation. It includes over 120 diagnoses and procedures, displayed through drawings, sketches, X-rays, and photos, which are easily accessible through a slider that lets you browse quickly through the simple steps of treatment. According to the manufacturer Genuitive Inc, patients responded with a higher case acceptance rate when their dental practitioner was directly explaining conditions and treatment plans with the aid of DDS than when they were left alone to watch a video or simply handed printed brochures.

The full version is available at the iTunes app store for US$399. Users can also buy a trial version with limited content for US$0.99.

Web: www.ddsgp.com

(i)Pad your dental practice

Daniel Zimmermann

DTI

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Welcome to the first HKIDEAS

Hong Kong’s new premier showcase for dental professionals to be held in June 2010

HKIDEAS – A joint effort in global oral health enhancement

Welcome message by Dr Sigmund Leung, President of the HKDA and Chairman of the Organizing Committee of the 1st HKIDEAS

Situated at the confluence where East meets West, Hong Kong has been an ideal place for international exchange in various aspects and there is no exception for dental knowledge. Given the unique strength arising from Hong Kong’s reunification with the Mainland, the Association surely is the best platform for bringing international efforts together in accelerating global oral health. On this bridging role, HKIDEAS will be the most convenient channel for our worldwide dental colleagues to update and exchange dental information for the benefit of all populations. Of top of numerous quality symposia, it is encouraging to see the innovative line-up of programme including “Primary Dental Care Forum”, “Knowledge Transfer Forum”, “Greater China Forum” as well as a luncheon summit focusing on China’s role in Global Oral Health. Prominent speakers around the world are invited in a bid to promote joint efforts in global oral health enhancement.

HKIDEAS is the first international congress created by our Association, signifying our determination in performing a more prominent role in driving the profession to a higher plane within the region. We strive to provide you with a perfect environment for knowledge exchange and a scientific programme with innovative “ideas” to meet different information needs. I would like to extend my hearty thanks to all members of the Organizing Committee for their enormous effort to make the event happen. I am indebted to all speakers, sponsors and trade exhibitors for their invaluable contributions and support. May I also wish all participants a most fruitful experience and pleasant stay in Hong Kong.

Thank you and look forward to seeing you again.

dti Dental Tribune International

HKIDEAS • Hong Kong • 18–20 June, 2010

Official news for visitors and exhibitors

General information

Badges
For identification purpose and admission to session venues, participants are requested to always wear their badges, which will be available upon registration.

Liability
The Organizing Committee is not responsible for personal or damage to personal property of registered participants. Participants should make their own arrangements with respect to personal insurance.

Taxis
The taxi station is at Harbour Road Entrance of HKCEC. All taxi prices in Hong Kong are counted in metres.

Disabled access
The Hong Kong Convention and Exhibition Centre offers a full range of amenities to assist those with disabilities. Spacious guest lifts readily accommodate wheelchairs, and all entrances are ramped. Braille directory and teleloop system are installed in the Convention Complexes which are located at the Harbour Road and Expo Drive entrances. There are accessible toilets, and specially designed guides, paths, specially designed toilets, and teleloop booths. The Centre’s car parks provide bays reserved for drivers with disabilities.

Emergency Phone Numbers:
- Police, Ambulance, Fire: 999
HKIDEAS Hong Kong 2010

Scientific programme

Friday, 18 June
9:00–13:30
Soft tissue augmentation techniques: success, complication and failure
Dr Sascha Jovanovic (USA)

Interceptive orthodontics
Dr Ricky Wong (Hong Kong)

11:00–13:30
GSK Luncheon Seminar:
Dentine hypersensitivity: the benefits of a patient centric approach in dental practice
Dr Stuart Smith (UK)

14:00–18:00
Hands-on porcine workshop:
optimal implant placement and bone and soft tissue grafting
Dr Sascha Jovanovic (USA)

Greater China Forum
(conducted in Putonghua)

Saturday, 19 June
9:30–13:30
Esthetic fine tuning in the complex implant cases
Dr Theresa Hsu (Taiwan)

Are dentists ‘insensitive’ to dentine hypersensitivity?
Prof. Anthony Blinkhorn (Australia), Dr Chun-hung Chu and Prof. Lakshman Samaranayake (Hong Kong)

Primary Dental Care and Dental Education Forum
9:30–12:30
Sedation Workshop
Dr John Lowe, Dr Billy Lau and Dr Yu-fat Chow (Hong Kong)

Lunch Break

Sunday, 20 June
9:00–11:00
Medical Protection Society Session
When you are in a hole, stop digging
Dr Kevin Lewis and Dr Stephen Henderson (UK)

10:00–13:30
Bringing innovations into practice—evidence-based techniques and materials for implant dentistry
Dr Mario Roccuzzo (Italy)

11:30–14:30
J & J Luncheon Seminar
Reducing the impact of oral diseases: prevention is the key
Prof. Louis Depaola (USA)

Lunch Break

14:30–17:00
Implant aesthetics for the new decade—what’s new and what works?
Dr Christopher Evans (Australia)

Laser Seminar
Dental laser—Good buy or Good-bye—Benefit of my practice from the use of lasers
Dr Siu-kwan Sze and Dr Johnny Wong (Hong Kong)

14:30–18:00
Focused field cone beam computed tomography (CBCT) in dentistry
Dr Marty Lewis (USA)

Infection Control Session
Dr Bun-ka Yiu (Hong Kong)
—Conducted in Cantonese

Subject to change. Last update on 3rd June 2010.
Discover **NEW** Colgate Sensitive **Pro-Relief™**
with **PRO-ARGIN™** TECHNOLOGY

New Colgate® Sensitive Pro-Relief™ desensitizing paste with Pro-Argin™ is clinically proven to provide instant and lasting sensitivity relief after just one application.

Colgate® Sensitive Pro-Relief™ with Pro-Argin™ Technology is a breakthrough treatment for patients with dentin hypersensitivity. It can be used before or after dental procedures such as prophylaxis and scaling.

- Significantly reduces sensitivity for an easy, comfortable procedure
- Fast and easy application using a rotary cup, similar to a prophesy paste
- Clinically proven to deliver instant relief that lasts four weeks after a single application

* Graphical representation based on SEM photography; for illustration only

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Home Remedies for Dentine Hypersensitivity

Hypersensitivity is characterized by short, sharp pain arising from exposed dentin in response to stimuli such as cold, hot, sour or sweet food and drinks, air (cold weather) or pressure and cannot be ascribed to any other dental disease. The cause of hypersensitivity is loss of enamel on the tooth crown exposing the tooth root (Figure 1). Dentine is generally covered by enamel in a tooth crown and by a protective layer called cementum in the tooth root surrounded by gum. Dentine contains thousands of microscopic tubular structures that radiate outwards from the pulp (Figure 1).

Loss of enamel can occur as a result of aggressive and incorrect tooth brushing, over consumption of acidic food and excessive tooth grinding. Gum recession may occur due to aggressive and incorrect tooth brushing, aging, gum diseases and certain dental procedures. The cementum on the exposed tooth root will then easily be removed and dentine is exposed resulting in dentine hypersensitivity.

Diagnosis is Important
Dentine hypersensitivity may share similar symptoms with dental decay and gum disease, hence, it is essential to consult a dentist when you suffer from pain of similar nature. In addition, the cause of dentine hypersensitivity should be identified and a diagnosis by exclusion must be made for dental hypersensitivity, ruling out other conditions requiring different treatment. Once the diagnosis of dentine hypersensitivity is confirmed, the dentist may discuss with you regarding decreasing the intake of acid-containing foods, and show you correct brushing techniques.

Home Management with Desensitizing Toothpaste
Traditional beliefs of gargling warm water with salt and biting ampalaya (bitter fruit) and medications for pain relief often cannot eliminate dentine hypersensitivity. Use of desensitizing toothpaste is considered by many as the “first option” recommendation. Some desensitizing toothpastes contain potassium salts to interrupt the neural response to pain stimuli. It is effective but often takes 4 to 8 weeks for pain relief. Other desensitizing toothpastes contain strontium salts to occlude open dentinal tubules from external stimuli associated with dentine hypersensitivity. Certain patients, however, do not find it effective.

New desensitizing toothpastes with arginine and calcium carbonate (Arginine-CaCO₃) that occludes and blocks open dentinal tubules, are now available in the market. Our study on 390 adult patients with dentine hypersensitivity demonstrated significant pain relief after using professional desensitizing paste with Arginine-CaCO₃. 1 The new Colgate® Sensitive Pro-Relief™ desensitizing toothpaste containing Arginine-CaCO₃ and fluoride is developed for routine daily use.

References:
Home Remedies for Dentine Hypersensitivity

Hypersensitivity is characterized by short, sharp pain arising from exposed dentin in response to stimuli such as cold, hot, sour or sweet food and drinks, air (cold weather) or pressure and cannot be ascribed to any other dental disease. The cause of hypersensitivity is loss of enamel on the tooth crown and gum recession exposing the tooth root.

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Fig 1: Enamel loss exposing dentine

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Fig 2: Gum recession exposing dentine

Fig 3: Pain eliciting by movement of dentinal fluid

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NEW!

Instant & lasting sensitivity relief
with breakthrough Pro-Argin™ Technology

Pro-Argin™ Technology, comprised of arginine and an insoluble calcium compound in the form of calcium carbonate, is based on a natural process of tubule occlusion. It plugs open tubules to help block the pain sensations.

Colgate® Sensitive Pro-Relief™ with Pro-Argin™ Technology is the first toothpaste that is clinically proven to provide instant & lasting sensitivity relief:

- Instant relief when applied directly to the sensitive tooth with the fingertip and gently massaged for one minute
- Clinical studies demonstrated significantly greater sensitivity reduction with twice daily brushing compared to control toothpaste with potassium ions
- 1450 ppm fluoride for caries prevention
- Contains the Pro-Argin™ Technology as in the Colgate® Sensitive Pro-Relief™ Desensitizing Paste

Colgate® Sensitive Pro-Relief™ Toothpaste for the daily oral care of sensitive teeth

6 Docimo R et al J Clin Dent 2009; 20 (Spec Iss): 137-143

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