IDS flourishes despite economic trouble
Overseas sales rescue German dental industry from declining domestic market

Daniel Zimmermann
DTI

LEIPZIG, Germany: The world’s largest dental show has defied the economic gloom. According to a preliminary report released by the organiser Koelnmesse at the end of March, the number of visitors this year increased by 6.9 per cent to over 100,000. The number of exhibitors also rose by 4.5 per cent to 1,920. International companies held a 65 per cent share, an increase of 10 per cent compared with the previous show in 2007.

The results confirm a slight decline in the German domestic market, which is significant for the local dental industry. Sales have dropped by 2.6 per cent to €1.58 billion compared with 2007; this is attributed mainly to financial constraints in the dental and dental technology sectors in the last quarter of 2008. Although dental physicians are the group of medical specialists who are the most willing to invest in the establishment of clinics, according to the latest results of the Institute of German Dental Physicians (IDZ), the overall investment trend has fallen significantly.

However, a survey conducted by the Association of German Dental Manufacturers (VDDI) found that export business expectations for 2009 are positive overall in spite of varying business development in individual regions. VDDI Chairman, Dr Martin Rickert said that 85 per cent of the member companies surveyed expect a rise in, or at least consistent, overseas sales for 2009. The export quota of the companies traditionally operating as ‘global players’ is 57 per cent.

“It is good news that in spite of the turbulence in the financial market, the dental industry and the health economy can, overall, sustain as solid markets,” Dr Rickert said during a press conference in Cologne. “IDS has confirmed its status as the international leading trade show in dentistry.”

“We are certain that the show’s outcome will give positive signals for the global dental market and international health markets as well,” he added.

Visitors are passing a banner last week at IDS Cologne. (DTI/Photo Koelnmesse)

Oil giant helps children brush
Shell Petroleum in Brunei is donating $3,080,770 to the country’s Dental Health Pilot Project, which aims to help children to carry out regular brushing of their teeth. In the ASEAN region, Brunei ranks the worst in the number of youngsters under 12 with decayed, missing and filled permanent teeth.

Soft drinks under attack
In an attempt to reduce dental health problems, the Philippines has announced plans to tax soft drinks. Should the bill be ratified, the government will charge a 20 per cent duty on carbonated drinks through their inclusion in the list of non-essential goods under the country’s National Internal Revenue Code.

Graduates in India leave dentistry
Many Bachelor of Dental Surgery (BDS) graduates in India are forced to quit dentistry and work in other, more lucrative jobs, the newspaper the Times of India reports. Many of them, for example, would join a BPO (Business Process Outsourcing) or work in health insurance agencies, which pays three to four times better than beginner dental work. BDS graduates usually earn between US$40 and US$60 a month when they start working as a dentist.

Dental education in India has grown in recent years and now ranks first in the world in having the highest number of dental schools. The country has more than 250 dental institutions, which produce between 15,000 and 20,000 BDS graduates every year.

NY dental college boosts HIV research
Seeking to shed new light on HIV’s ability to survive in the body and cause disease, the US National Institute of Allergy and Infectious Diseases has awarded a five-year, US$1.9 million grant to an AIDS research team at the New York University College of Dentistry to continue its study of a new mode of HIV replication that involves cooperation between viruses.

Dr David N. Levy, an Assistant Professor of Basic Science and Craniofacial Biology, discovered the mechanism in an earlier study he conducted with the assistance of a one-year pilot grant from CFAR, The Center for AIDS Research at the NYU School of Medicine. He demonstrated that unintegrated viruses can replicate when they are assisted or “complemented” by viruses that successfully integrate with the DNA of infected cells.

Extra
A preview of the FDI congress in Singapore
Malaysian rules rules hamper medical tourism

Physicians and dentists in Malaysia are not able to compete viably in the rising Asian medical tourism market. Unlike in other countries such as Singapore or Hong Kong, doctors in Malaysia are not allowed to advertise anything other than names, qualifications, job titles, telephone numbers and places of practice in any form of advertisement. Moreover, all medical advertisements, including websites, have to be approved by the Ministry of Health’s Medicine Advertisements Board (MAB).

The MAB’s control has blocked the advertising industry, barring it from foreign advertisements. Foreign health-care facilities and tourism agencies wanting to advertise in the media in Malaysia, including through advertisements, are still not allowed to name the health-care facilities for which they are advertising.

While Ministry officials claim they do their best to help promote medical tourism, other countries are extending their lead in the competition for foreign patients who seek treatment abroad. In the Philippines, where the 4th World Health Tourism Congress was held in March, the country’s Department of Tourism established a significant medical tourism program in 2006 already. According to the Department’s figures, total spending by patient tourists and wellness seekers reached an estimated US$550 million per year, or an average spending per tourist of about US$855,000.

Thailand has also become a popular destination for medical tourists in Asia, earning the country more than US$1 billion a year. The Thai government has invested in many areas of the country’s burgeoning medical tourism market, such as spending visa clearance for patients and ensuring the highest standards through accreditation programmes. By now, 90 per cent of Australian dental patients that go abroad are visiting Thailand for treatment, according to the website Fiscaldenthealth.com.

Recently, Malaysia’s Health Minister Datin Seri Low Thong Lai told the newspaper The Star that health care is not just another commodity for sale in the market and that any form of advertisement should not breach the medical code of ethics. Malaysian Medical Association president Datin Dr Khoon Kah Lin added that his association is open to discussion with the health-care industry regarding innovative ways to make medical tourism more attractive but he would rather be conservative than over-advertise.

**Martial arts film star to promote global health**

The Australian Healthcare and Hospitals Association (AHHA) is urging the Federal Government of Australia not to further delay implementation of the Commonwealth Dental Health Program in the light of the National Health and Hospitals Reform Commission’s recent proposal to include dental services in a Medicare-type scheme. Through the Commonwealth Dental Health Program (CDHP), the Government has promised to provide funding for state and territories to deliver public dental services and help to clear the backlog of people waiting for public dental treatment. The Program aims for one million additional public dental visits by providing AUS$290 million (US$210 million) over a period of three years.

“We welcome the recognition by the National Health and Hospitals Reform Commission of the need for increased Commonwealth involvement in the provision of public dental services,” said Ms Prue Power, Executive Director of the AHHA. “However, we are concerned that the debate about the implementation of the Commission’s proposed ‘Denticare’ scheme may delay implementation of the Commonwealth Dental Health Program.”

Ms Power said that over 100,000 pensioners and low income earners have missed out on promised dental services due to the Senate stalemate over the implementation of the proposed Commonwealth Dental Health Program which is a Government election commitment and targets pensioners and low income earners who often struggle to afford private dental services. The current stalemate in the Senate has left thousands of Australians without access to promised dental services she added.

AHHA has proposed a solution to this Senate stalemate very similar to the Denticare scheme proposed by the Commission. It reduces the scope of the Medicare Chronic Disease Dental Program by excluding more complex dental care such as crowns, bridges, implants and orthodontics, thereby freeing sufficient funds to implement the CDHP for low income earners.

“We therefore urge the Government to ensure that both the Senate supports the alignment of the scope of the Chronic Disease Dental Program with the proposal for Denticare so that the Commonwealth Dental Health Program can be implemented without further delay,” Ms Power said.

**Aussie government rebuked for dental health programme**

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**Aussie government rebuked for dental health programme**

Malaysian rules rules hamper medical tourism
First global incubator launched for dentistry

Claudia Salwiczek

LEIPZIG, Germany: Launched at the Greater New York Dental Meeting in December 2008, Dentcubator is the world’s first virtual incubator for dental innovations. With currently 65 shareholders in 11 countries, Dentcubator aims to help develop and fund innovative ideas for the dental market. Proposals can be sent either to a member of one of the ten panels or to ideas@dentcubator.com.

They are referred to one of ten committees, whose members are globally renowned speakers, educators and inventors like Stephen Buchanan, John McSpadden, Sonia Lezly, Sascha Jovanovic, Sascha Jovanovic, or Jörg Strew. Every idea is evaluated not only for its own efficacy, but also for its ability to be redesigned for the emerging markets. Next, the idea is passed on to a screening committee that makes helpful suggestions about how the patent holders can further improve their product. Ideas that are deemed worthy of funding are passed on to Dentcubator for financial support, branding, marketing, advertising and access to the general dental market.

New compound to fight caries

Research conducted at the Health Sciences University of Hokkaido in Japan has found that CSA-15, a antimicrobial compound from Ceragenix Pharmaceuticals, Inc. in the United States, had potent bactericidal activity against all 25 strains of oral bacteria related to dental caries and periodontal disease including protease positive strains. The strains tested were isolates of Streptococcus mutans and Porphyromonas species that are responsible for dental caries and periodontal disease.

CSA-15 is a Ceragenin compound which is composed of a group of rapidly active broad spectrum bactericidal, fungicidal and virucidal with potent activity. “Since CSA-15 is not peptide based, it is not a substrate for the proteases that are found in the oral cavity, which are capable of degrading antimicrobial peptides,” said lead investigator Dr Emiko Isogai, a Professor at the Department of Disease Control and Molecular Epidemiology at the Health Sciences University of Hokkaido. “The simplicity of the Ceragenins make them easier to prepare and purify than antimicrobial peptides.”

Steve Porter, Chairman and CEO of Ceragenix, stated that his company has seen increasing interest in their Ceragenin technology from medical device and pharmaceutical companies as a result of the emerging drug resistant bacteria in daily life. He added that the company’s first joint development and commercialisation transactions for their technology are expected to occur later this year.

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Ivoclar Vivadent: passion vision innovation
Dental care in Australia

Daniel Zimmermann

Australians enjoy equitable access to medical services supported by universal Medicare insurance, an effective Pharmaceutical Benefits Scheme, community-rated private insurance, as well as the provision of both intern training and services beyond private sector capacity by public hospitals. When the Australian government established the National Health and Hospitals Reform Commission in 2008 to inform structural health reform, it correctly identified exclusion of dentistry from some of these structures as a core problem.

The Commission’s interim recommendations for the entire health system range from Option A, which proposes minimal change, to a contentious Option C, which proposes multi-canal endodontics, lower partial dentures, and crowns. Also, the restorative Denticare list would have the effect of constraining the skills of new graduates, requiring them to take on additional training. This could be converted to Option C–Denticare but only if the rest of the Australian health-care system is similarly modified.

Moreover, there are significant difficulties with the Denticare model suggested. In particular, Denticare is currently planned to exclude many important dental services, including multi- canal endodontics, lower partial dentures, and crowns. Also, the restorative Denticare list would have the effect of constraining the skills of new graduates, requiring them to take on additional training. This could be converted to Option C–Denticare but only if the rest of the Australian health-care system is similarly modified.

We support the intent of the Commission to reduce the number of years to two. In addition, we support the introduction of Denticare to its planning. There are two sides of the coin and apply to any prognosis in the dental sector.

Manufacturers of consumables have reported stable or marginally increasing sales figures, in the area of capital goods, however, manufacturers of equipment, such as practice fittings, dental units, imaging devices, and CAD/CAM, as well as manufacturers of dental implants have reported a clear decrease. The future is complex and will be required to plan for the future. But the future is complex and cannot be managed by knowledge alone. Human spirit and emotional competence and knowledge especially count.

Contact
Friedrich Herbst
Executive Director of international dental manufacturers (idm) in Cologne was the present shifting in the finance markets and possible effect on the future. After the glom at the Chicago Midwinter Meeting in February, the founders of the Dental Trade Alliance from the US were particularly surprised by the positive feedback at IDS. The momentum mood and facts, however, are two sides of the coin and apply to any prognosis in the dental sector.

Contact
Daniel Zimmermann

Dental Tribune welcomes comments, suggestions and complaints at feedback@dental-tribune.com

Planning for the future

Friedrich Herbst

The famous German philosopher Friedrich Nietzsche once said, “We have already gone beyond whatever we have heard of.” Have we already overcome the current global crisis that dominates the media? If you happened to visit the IDS in Cologne in Germany this year, you would have been under the impression that this was the case. The floors and booths were crowded, filled with happy faces, and the show broke records in all respects.

In spite of this, the main topic at the assembly of the international dental manufacturers (idm) in Cologne was the present shifting in the finance markets and possible effect on the future. After the glom at the Chicago Midwinter Meeting in February, the founders of the Dental Trade Alliance from the US were particularly surprised by the positive feedback at IDS. The momentum mood and facts, however, are two sides of the coin and apply to any prognosis in the dental sector.

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Genetic discovery could lead to advances in dental treatment

Scientists find gene responsible for tooth enamel production

David Stauth
USA

Researchers have identified the gene that ultimately controls the production of tooth enamel, a significant advance that could some day lead to the repair of damaged enamel, a new concept in cavity prevention, and restoration or even the production of replacement teeth. The gene, called Ctip2, is a ‘transcription factor’ that was already known to have several functions—in immune response, and the development of skin and the nervous system. Scientists can now add tooth development to that list. The findings were just published in the Proceedings of the National Academy of Science.

“It’s not unusual for a gene to have multiple functions, but before this we didn’t know what regulated the production of tooth enamel,” said Chrissa Kioussi, an assistant professor in the College of Pharmacy at Oregon State University. “This is the first transcription factor ever found to control the formation and maturation of ameloblasts, which are the cells that secrete enamel.”

The researchers used a laboratory mouse model in this study in which this gene has been ‘knocked out’ and its protein is missing. Such mice lack basic biological systems and cannot live after birth, but allow scientists to study what is there, and what’s missing. In this case, the mice had rudimentary teeth ready to erupt, but they lacked a proper enamel coating and never would have been functional.

“Enamel is one of the hardest coatings found in nature, it evolved to give carnivores the tough and long-lasting teeth they needed to survive,” Kioussi said. With an understanding of its genetic underpinning, Kioussi said, it may be possible to use tooth stem cells to stimulate the growth of new enamel. Some research groups are already having success growing the inner portions of teeth in laboratory animal experiments, but those teeth have no hard coatings—the scientists lacked the genetic material that makes enamel.

“A lot of work would still be needed to bring this to human applications, but it should work,” Kioussi said. “It could be really cool, a whole new approach to dental health.”

Many people have problems with eroded tooth enamel, including people who smoke and especially some who use illegal drugs such as methamphetamine. And most cavities start as a hole in tooth enamel that allows decay to begin.

Following the success of colored NobelProcera™ crowns, the same colors are now available for the full assortment—crowns, copings, bridges, abutments, implant bridges. The innovative coloring technique ensures excellent material homogeneity, consistent color throughout frameworks. External studies show no degradation in strength compared to white zirconia*. NobelProcera™ offers solutions for all indications—single crowns, bridges up to 14 units, cemented or screw retained, fixed or removable prosthetics on natural teeth and implants. NobelProcera™ provides extensive experience and access to a quality-assured centralized industrial manufacturing. Precision of fit, quick turnaround times, consistent and predictable aesthetics—all will enhance your customer satisfaction and the efficiency of your practice. Nobel Biocare is the world leader in innovative evidence-based dental solutions. For more information, contact a Nobel Biocare Representative or visit our website.

www.nobelbiocare.com/nobelprocera

* Nordic Institute of Dental Materials (NIDM) NobelProcera™ Zirconia testing: S306269B, S306205B.

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IADR’s Williams calls for excellence and impact in research

Javier Martínez de Pisón
DT Latin America

MIAMI, FL, USA: The President-Elect of the International Association for Dental Research (IADR), Dr David Williams, has encouraged colleagues to focus on conducting research that has practical significance for global oral health. In his speech at the IADR’s 87th General Session and Exhibition in Miami, he said that the profession has a responsibility to ensure the continuation of research. “But in Europe we have a new mantra: Excellence with Impact,” said Dr Williams in his speech entitled Global Uncertainty and Global Challenges, which was attended by 5,000 researchers, including a large contingent from Latin American and Asian dental schools, as well as presidents of the FDI World Dental Federation and of national dental organisations. The President-Elect said researchers as the torch-bearers of global oral health face a challenge: “We are well aware that the global burden of oral disease is immense and our leadership in these issues is essential”. He added that dental caries is one of the most common chronic diseases worldwide, periodontal disease affects up to 15 per cent of the population, and oral cancer is the eighth most common cancer worldwide.

“We need fundamental research, to improve our basic understanding of the diseases which concern us,” explained Dr Williams. “But we also need to deliver ethical, effective, evidence-based care. We need effective prevention, as well as more effective treatment, and we need to establish the kinds of workforce that are appropriate in different global settings. And all of this without thinking about the links between oral and systemic health, and the implications this could have for general health and well-being”.

In addition, the current President of the IADR Dr J. M. ‘Bob’ ten Cate of the Netherlands called for an International Year of Oral Health within five years, to bring oral health to the attention of a significantly wider audience.

The IADR’s 87th General Session and Exhibition in Miami was held from 1 to 4 April. Upcoming meetings are the World Congress on Preventive Dentistry in Phuket in Thailand, 7–10 September 2009, and the IADR General Session and Exhibition in Barcelona in Spain, 14–17 July 2010.

Dr J. M. ‘Bob’ ten Cate, IADR president, at the IADR 87th Session and Exhibition in Miami. (DTI/Photo Jan Agostaro)

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EU develops guidelines for use of Cone Beam imaging

Claudia Salwiczek

New guidelines have been established for European practitioners using Cone Beam Computed Tomography (CBCT). The Basic Principles on the use of Cone Beam CT—developed by the European Academy of Dental and Maxillofacial Radiology (EADMFR) in collaboration with the EU-funded SEDENTEXCT project—strive for the safe and ethical use of CBCT in dental surgeries.

“In many European countries, dentists can purchase and use CBCT without any additional training and so there was a pressing need to establish some guidelines,” explained SEDENTEXCT coordinator Professor Keith Horner, University of Manchester, UK. “The 20 Basic Principles are aimed at protecting the patient and guiding the dentist towards good practice, covering important areas such as justification and optimisation of CBCT examinations and training of users.”

Among the Basic Principles are guidelines about when CBCT examinations may be justified, as well as information about training, equipment and safety measures. Dr Lennart Flygare, EADMFR President, said he hopes the document will become a core standard within Europe for dentists, dental specialists and equipment manufacturers.  

Agreement closed at Dubai meeting

AEEDC Dubai managed to impose itself as a strong competitor in holding high profile conferences and exhibitions,” Dr Conrod said. “It provides an excellent opportunity for dentists in the Gulf Region to update their skills and knowledge while networking with colleagues from around the world.”

AEEDC Dubai is one of the largest dental events in the Middle East. The most recent show hosted 20,000 trade visitors of whom 6,000 were conference attendees, according to a press release. An industry review also revealed that new contracts worth US$300 million were signed between exhibitors and local dealers.

AEEDC ranks fifth in the dental meeting survey conducted by the organisation international dental manufacturers (iDM). In 2007, the AEEDC organisers hosted the FDI Annual World Dental Congress.
Message from the president

Each FDI Annual World Dental Congress (AWDC) has a distinctive flavour and presents the unique opportunity to learn about the culture and customs, as well as oral health issues, in another part of the world, which adds to the attraction of these meetings. This is the time of the year when both our FDI staff and the members of the local organising committee (LOC) shift into top gear as the excitement of the approaching congress builds. Knowing the members of the Singapore Dental Association as I do, I can assure you that a most memorable congress is in store for us this year.

FDI’s Education Committee, working with the LOC, has an impressive array of speakers lined up for our scientific programme. The broad range of topics will include periodontology, oral cancer, salivary biomarkers, and implants. Workshops conducted as workshops will address current topics, such as bisphosphonates.

Anyone who has attended an international dental meeting in Singapore, like the biennial IDEM meeting, knows what an excellent host our colleagues in Singapore are. The social events are planned to take advantage of the remarkable touristic attractions, as well as the marvellous climate and exciting cuisine enjoyed in this exquisite city. At Singapore Night, a sunset ride on the Singapore Flyer, the world’s largest observation wheel, will give spectacular views of the tropical paradise all the way to Indonesia. You will also enjoy exotic food while networking with international colleagues. The Gala Dinner at Orchidville also promises to be a memorable event, especially for those of us for whom such stunning tropical gardens are only seen in movies or on postcards!

The Suntec Singapore International Convention and Exhibition Centre is a modern venue providing all the facilities needed under one roof. This year, even the Welcome Ceremony will be held on-site, and with many excellent hotels close to the Centre attending all events will be very convenient.

Location, facilities, and scientific and social programmes are all important ingredients for a successful dental congress. The AWDC, however, is really all about people, and we need you in attendance to help us in Advancing Dentistry at the Crossroads of the World. FDI congresses are designed to promote oral health globally. Our Singapore colleagues are really putting out the welcome mat for us, and all our committees and staff have worked hard to deliver a first-class congress.

See you in Singapore!

Dr Burton Conrod
FDI President

Limited attendance courses

Spotlight on limited attendance courses at FDI AWDC Singapore 2009

Limited attendance courses give congress attendees the opportunity to gain additional knowledge and skills from renowned international experts in their field in a more personal setting. The dental topics addressed in these courses are best delivered to smaller groups in a practical hands-on setting.

At the congress in Singapore, the limited attendance courses will be held on Tuesday 1 September, the day before the main scientific programme of the FDI AWDC begins.

This year, the courses cover a wider range of clinical subjects, such as endodontics, sinus lift implant surgery, third molar surgery, the immediate overdenture, paedodontic emergencies, practice management, and paedodontic behavioural management.

Detailed information on each of the limited attendance courses can be found on the FDI website.

World Dental Exhibition

At this year’s FDI AWDC in Singapore—known for its advancements in technology and keen business sense—the FDI World Dental Exhibition is sure to follow suit, spotlighting all of the latest innovations in the dental industry and showcasing the full range of all the top companies from around the globe.

The exhibition is free of charge to all those registered for the congress; for those who wish to explore the exhibition only, passes can be purchased on-site for a small fee.

Please look at our website for opening hours and the regularly updated list of exhibitors.

News in brief

Scientific programme

More than 50 sessions over 6 days structured around this year’s theme of Advancing Dentistry at the Crossroads of the World will highlight the latest advancements and techniques in the dentistry world.

Registration

Those wishing to attend the Congress need to complete the registration forms and return them to the FDI head office by 25 July 2009. After this date, participants are invited to register on-site at the Congress venue.

Take advantage of the early bird rates by registering before 15 May 2009.

Official Carrier

Receive up to 20 per cent discount with the Star Alliance network.
Social events, day tours & post-congress excursions

Information available online

Social events
No FDI congress would be complete without the time-honoured tradition of Local Night and Gala Dinner events. This year is no exception: each evening is one rich in Singapore culture, ambience, and cuisine.

Singapore Night will take place at the newest addition to the Singapore skyline: the Singapore Flyer! After a ride on the Flyer, experience the delicacies of Singapore cuisine in the open-air market atmosphere at the Marina Bay.

For more information on these events, as well as the FDI Welcome Ceremony, please visit the FDI website.

Day tours
The Singapore Dental Association is proud to host the 2009 FDI AWDC and eager to share the rich cultural heritage of Singapore with all congress attendees. Attendees are offered the opportunity to discover Singapore by immersing themselves in its culture; in addition to the sightseeing day tours offered this year, like visits to the Singapore Zoo or the famed Orchidville, there are several day tours that allow you to participate in everyday activities, like the Tea Workshop or the What’s Cooking activities, where you will learn to cook local specialties. Places for these activities for small groups are sure to be filled quickly; book early to ensure your spot!

Post-congress excursions
For attendees wishing to explore more of what the Asia Pacific Region has to offer, we invite you to check out our post-congress excursions: be swept away by Indonesian charm on the exotic island of Bali, indulge yourself in a Malaysian getaway, or discover the appeal of the Thai culture. Each excursion can be tailored to your needs by choosing different hotels and tours for certain destinations.

For more information on the rates for most of the hotels and all of our official hotels, visit the Pacific World website.

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Chicago Midwinter Meeting shortened for 2010

Fred Miehrenhuber

Chicago, IL, USA: In 2010, the Chicago Dental Society (CDS) will move its annual Midwinter Meeting to the west building at McCormick Place and will shorten its meeting to three days. Exhibits and courses will open on Thursday morning and close on Saturday evening.

With the new facility in the west building, the CDS will also be able to house all courses and exhibits in one building. The 2010 event will be held from 25 to 27 February in Chicago in the US.

According to event organizers, the Midwinter Meeting was recently chosen as offering the best cost-to-value benefit of any dental trade show in the US, as evidenced by 66 percent of exhibitors responding to a post-show survey. The society’sSetName plans have already earned kudos from the Dental Trade Alliance, which called CDS “one of the most forward-thinking” show organizers. “These changes will make the meeting even more cost-effective and convenient for our attendees and exhibitors,” said Randall Grove, executive director of the Chicago Dental Society, in a press release after the 2009 meeting.

Established in 1864, the Chicago Dental Society has more than 4,000 members in the Chicago area, making it the largest local affiliate of the Illinois State Dental Society and the American Dental Association. The society advocates for improving oral health care in the US and represents the interests of its members and the public they serve.

Access Pharmaceuticals, Inc. in the US has signed product development and distribution agreements with Meda, a product for the treatment of oral mucositis, with the Korean company JCOM & DONG—A Pharmaceutical. The financial terms of the arrangement have not been disclosed.

Johnson & Johnson in the US is sponsoring the Listerine Mobile Mouth in Malaysia. The project is part of the company’s Complete Your Daily Oral Care with Mouthwash campaign, which is being conducted in conjunction with the Malaysian Dental Association.

Biolase Technology, Inc. in the US will begin distribution of its laser products for dentistry in Australia and New Zealand through its sole North American distributor Henry Schein, Inc.

The Singapore Dental Association has reported that it will continue to approve alcohol-based mouthwashes. Recent evidence from Australia has revealed that the long-term use of these mouthwashes can lead to an increased risk of developing oral cancer.

Align Technology, Inc. in the US is no longer marketing its Invisalign Teen orthodontic treatment aligners worldwide. To date, the system has only been available in the US and Canada.

Henry Schein, Inc. has announced the acquisition of Ortho Organizers, a privately owned manufacturer and distributor of orthodontics products with headquarters in Carlshad in the US and subsidiaries in Australia and New Zealand. The terms of the transaction have not been disclosed.

The dental companies Kura-ray, GlaxoSmithKline, Unilever, and Procter & Gamble have been included in the 2009 Global 100 Most Sustainable Corporations in the World list. Launched at the World Economic Forum 2005 in Davos in Switzerland, the annual Global 100 celebrates the performance of various companies in several social, environmental, and strategic governance issues.

KCM Holdings Corp. in the US has formed CT Dental Canada in conjunction with Leonard Tan & Associates. CT Dental Canada has been awarded the sole right to import dental laboratory work from the CT International Dental Group in Hong Kong, CT plans to go public in both Canada and the US.
HELSINKI, Finland: The Finnish dental equipment manufacturer Planmeca OY has signed another delivery agreement with the Prince Philip Dental Hospital (PPDH) in Hong Kong. The new dental units included in the delivery will replace the current dental equipment at the hospital's paediatric department, the company said. The PPDFH is a publicly funded teaching hospital that provides clinical teaching facilities for the undergraduate and postgraduate students of the Faculty of Dentistry at the University of Hong Kong.

With Horseley Co. Ltd., Planmeca's local distributor in Hong Kong, Planmeca has announced the provision of 33 Planmeca Universal dental units, 4 Planmeca Compact c independent carts, and 37 Planmeca Chairs, all equipped with LED-operating lights, to the PPDFH. The installation will take place in July 2009.

“Such agreements demonstrate that even in the extremely competitive Asian market, it is possible to succeed by offering high-technology products of superior design,” states Jouko Nykänen, Director of Export Sales. “Our role is to encourage the customer to follow and appreciate the technical development. The Prince Philip Dental Hospital expects products and suppliers to be truly competent, which has led us to succeed in competing for delivery agreements.”

The first delivery agreement with the PPDFH was signed in 1998, and the current agreement is the fourth. After installation, the dental hospital will have a total of 212 Planmeca dental units. In addition to PPDH, Planmeca said to have signed a delivery agreement with the University of Maryland in the US for 27 Planmeca Sovereign dental units, 1 Planmeca ProMax 3DA-ray unit, and Triangle Furniture Systems' cabinetry.

“The products that meet the needs of the customers and the ability to keep our promises are behind these renewed agreements; for us, these latest agreements are a clear signal indicating that the customer is satisfied with our products and services in the long run,” concluded Nykänen.

(Edited by Daniel Zimmermann, DTI)

New dental lasers for Hong Kong

LEIPZIG, Germany: The German company elexxion has signed a cooperation agreement with HealthCare Dental Ltd. Under the agreement, the Hong Kong-based dental supplier will be allowed to market and distribute elexxion's wide range of dental laser systems to over 1,200 dentists in the Hong Kong area and Macau. The terms of the agreement have not been disclosed.

Products manufactured by elexxion use the latest dental technology on the market. The current elexxion delos product line combines a high-performance diode laser with an Er:YAG laser for use with most applications, such as oral surgery, bleaching or endodontics. With their claros system, the company also offers a diode laser for the gentle treatment of tissue. The elexxion duros is an erbium laser system for treating hard dental tissue.

According to Liljenqvist, Hong Kong was chosen to serve as elexxion's regional distribution centre for Asia. Among others, the company supported the 11th Congress of the World Federation for Laser Dentistry, which was organized in collaboration with the Hong Kong Surgical Laser Association in 2008. The company also has dealers in South Korea and Taiwan.

New dental lasers for Hong Kong

Daniel Zimmermann

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“We are currently undertaking more revolutionary projects”

An interview with Mectron, the company who invented Piezosurgery

Mectron, based in Italy, has revolutionised dental surgery with the development of piezoelectric bone surgery. Recently, the company presented the 5th generation of their Piezosurgery device at the IDS down in Cologne in Germany. We spoke with company founders Domenico Vercellotti and Fernando Bianchetti, as well as area managers Wolf Narjes and Alexandre Cadau, about the clinical advantages of their invention and how the company is reacting to the current market conditions.

Fernando Bianchetti: All the clinical protocols and techniques developed for Piezosurgery are based on scientific publications endorsed by universities and credible specialists in the field of dental surgery. They confirm not only the benefits for the clinician, such as maximum surgical precision and wider intra-operative visibility, but also those for patients who suffer from less postoperative pain.

Wolf Narjes: Piezosurgery has certainly been one of the most important developments in the dental and medical field. This unique device allows the surgeon to work in less stressful and safer conditions. Postoperative healing times are also reduced threefold with this method.


Fernando Bianchetti: The Piezosurgery Academy was established by Prof. Tomas Vercellotti to give scientific support to the Piezoelectric Bone Surgery. It is managing the whole clinical research and training activities in Piezoelectric Bone Surgery and works independently from Mectron.

Wolf Narjes: It is essential to be suitably trained in this technique. Therefore, we offer courses in Europe, Asia, as well in North and South America. Last year, we opened a new branch in Phuket in Thailand that serves as the Piezosurgery training centre for the whole Asia Pacific Region.

Alexandre Cadau: There is a reason that training is crucial for Piezosurgery. Users experience a steep learning curve before getting used to the micrometric movement of Piezosurgery, which is completely different from the traditional techniques. We organise workshops in many countries around the world that help dentists learn the differences between Piezosurgery and conventional drills and saws. In addition, we collaborate with universities, to offer attending clinicians cadaver dissection courses that help them appreciate the surgical benefits.

“Piezosurgery has certainly been one of the most important developments in the dental and medical field.”

Alexandre Cadau: Fernando is right. At the moment, we are experiencing a huge loss of confidence in all consumer groups. On the other hand, we have always been challenged by the depreciation of various foreign currencies, like in 1992 when devaluation hit many countries.

Dental Tribune: Market prospects for 2009 are rather uncertain due to the financial crisis. Is your company prepared for a potential economic slowdown?

Fernando Bianchetti: The only way to withstand this crisis is to remain successfully in the market through investments in scientific and technical research, in Europe and other countries.

Domenico Vercellotti: What Fernando just said has always been our corporate philosophy: it will certainly help us in difficult times like this. Mectron offers high quality products at reasonable prices and puts a lot of effort into the development of new technologies and not merely into expensive marketing campaigns.

Wolf Narjes: Being a family-owned company, Mectron is probably more flexible and manageable than larger companies. Therefore, we can react relatively quickly to unexpected market changes.

Have you already experienced an economic climate change in Italy and other markets?

Fernando Bianchetti: Since our company was founded in 1979, we have already had to go through occasional tough economic times. However, nothing really compares with the latest financial crisis.

With four regional headquarters, do you consider yourself a global cooperation?

Fernando Bianchetti: Certainly, our branches in Germany, India, and the Asia Pacific region report to our headquarters in Italy. In other countries, we have worked successfully with local dealers for almost ten years, in some countries even 20 years.

Alexandre Cadau: Piezosurgery certainly has been one of the most important developments in the field of dental and medical field. This unique device allows the surgeon to work in less stressful and safer conditions. Postoperative healing times are also reduced threefold with this method.


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Wolf Narjes: If you mean: are we represented in all the important countries around the world, then definitely yes. Our network is well established in more than 80 countries, and our sales team is working daily to extend it even more.

How closely do the regional headquarters work with the headquarters in Italy?

Domenico Vercellotti: In Mectron’s corporate organisation, the regional headquarters represent points of information exchange and contact between the headquarters in Italy and local clinicians.

Fernando Bianchetti: They work very closely with our main headquarters in Italy for different reasons. Mectron Italy helps the regional headquarters and, of course, our other distribution partners to provide their customers with technical support. The staff at regional headquarters, as well as our distribution partners, are regularly trained by our engineers in Italy.

Alexandre Cadau: All Mectron partners receive marketing support through the headquarters in Italy. In this way, we ensure that all our staff and partners, whether an Italian dealer or South American distributor, keep up to date with the latest specifications and developments of our products.

Wolf Narjes: I have to add that although marketing is centralised, the structure of our company is still flexible enough to fulfil local demands.

Do you have offerings in other market segments as well?

Fernando Bianchetti: Let’s speak about the other products Mectron has been manufacturing for plenty of years like piezoelectric scalers, curing lamps and air polishers. Mectron was the first company to introduce on the market a scaler handpiece in titanium which has represented the new state of the art in life span and sterilization, as well as the first one to launch a LED curing lamp!

Wolf Narjes: Mectron has a lot of capacity for innovation. Therefore, our company is not only a leader in the field of the Piezosurgery technique, but also in the light curing segment.

Alexandre Cadau: We say we have succeeded to be a long-term market leader. As far as the production of LED curing lights is concerned, our company is still one of the biggest manufacturers worldwide.

Many companies are starting to extend their range of products. Are there any new products being developed that you would like to talk about?

Fernando Bianchetti: Apart from the further improvement of existing products, we are currently undertaking more revolutionary projects in our R & D department. A total of fifteen per cent of all staff working at Mectron are actually involved in this.

Domenico Vercellotti: Our mission is to implement new technologies for the dental market that are based on the latest evidence-based research. We will also stay on this track in the future to develop innovations that are economical and bring true clinical advantages.

Thank you all very much for the interview.

“Our mission is to implement new technologies for the dental market that are based on the latest evidence-based research.”
IPS e.max — Two clinical cases

Harald Kerschbaumauer & Dr Alexander Steinhöfler
Lerchenauer & Böhm

The following two clinical cases were treated with all-ceramic crown and bridge restorations. The first case involved a single tooth restoration with IPS e.max CAD/IPS e.max Ceram crowns. The second case was restored with an inlay/crown-retained bridge made of IPS e.max ZirCAD/IPS e.max ZirPress.

Case 1: 66-year-old patient: single crowns with lithium disilicate glass-ceramic copings in the maxilla

Pre-operative situation

The endodontically treated teeth 21 and 22 had been reconstructed with post and core build-ups had to be replaced by new prosthetic restorations 15 years after insertion due to aesthetic shortcomings. The following aspects were particularly noteworthy: the crown margins were located in the supra-gingival area with the dark root surfaces exposed, and the overall colour of the two crowns was grey compared to the contralateral natural incisors.

Planning

After ablation, teeth 21 and 22 were restored with the existing metal root posts with composite build-up material to be removed first. The prepared teeth had to be restored with tooth-shaped, metal-free post and core build-ups. For the crown, the use of IPS e.max CAD MO frameworks in connection with the IPS e.max Ceram veneering ceramic was planned. IPS e.max CAD MO is indicated for single crowns in the anterior and posterior region. As the IPS e.max CAD framework materials feature a similar opacity to that of IPS e.max Ceram Deep Dentin, the framework can be designed more generously in order to achieve maximum strength.

Pre-treatment

Once the crowns and composite build-ups, as well as endodontic posts, had been removed, the preparation was revised and an elastomeric impression taken. Thereafter, new post and core build-ups were inserted. The post and core build-ups were made using the light-curing composite Tetric EVOceram in the incremental layering technique and the glass-fibre-reinforced root posts Postec mounted onto super hard stone models with detachable segments. The restorations were inserted after retraction cords were applied in a relatively dry operating field. For the adhesive cementation technique, the chemically curing luting composite Multilink was used and the restoration conditioned with the chemically curing Multilink Primer. Subsequently, excess cement was removed prior to polymerisation, using foam pellets and brushes. Finally, the teeth were prepared to accommodate the new crowns. The margin was prepared in the intra-sulcular area (Figs. 3A & B).

Temporary restorations were provided in the form of resin crowns made of Syntemp c.d. plus, which were fabricated directly on the patient. The temporary crowns were fabricated using a polysulphone vacuum formed foil after the wax-up was prepared. The crowns were inserted with the eugenol-free temporary luting cement Syntemp.crm (Fig. 4).

After a non-inflamed gingival situation was achieved after four weeks, the location of the preparation margins in relation to the course of the gingival margin was checked and an impression of the abutment teeth taken. The sulcus management entailed a thorough display of the preparation margins by means of the double contrast technique. An electro-surgical extension of the sulcus was not required. Iron-III-sulphate was used as an astringent.

Fabrication of the restoration

The best starting point for the framework design is the fully anatomical model of the restoration, which is selectively reduced for the veneer. It is important that the veneering ceramic does not account for more than 50% of the entire restoration thickness to avoid a weakening of the overall restoration. The crown copings were fabricated from lithium disilicate glass-ceramic blocks (IPS e.max CAD MO) in the laboratory using the inLab system (Sirona, Fig. 5).

After fitting and finishing, the framework was fired in a ceramic furnace. The use of the stipulated silicone material firing tray and the IPS Object Fix firing paste is of utmost importance (Fig. 6). Only in this way can the stipulated temperature profile be achieved and thus the accurate shade and opacity attained. Figure 7 shows the tempered crown copings. Different firing programs are available, depending on the ceramic furnace in use.

Before the IPS e.max Ceram materials are applied, the framework is cleaned with steam or in an ultrasonic bath (Fig. 8). The IPS e.max CAD framework must not be blasted with aluminium oxide.

Before dentine and incisal materials are generously layered, a thin wash layer must be applied with any layering material and fired (Fig. 9). Subsequently, the restoration can be completed as usual (Figs. 10 & 11A & B).

The restoration must not be sandblasted with aluminium oxide prior to seating. The inner aspects of the restoration were treated with IPS Ceramic Etching Gel for 20 seconds. This etching procedure is conducted both with adhesive and conventional cementation.

Figures 11A and B show the completed crowns after the second firing.

Fig. 5: IPS e.max CAD MO crown copings.—Fig. 6: Application of the firing paste.—Fig. 7: Tempered crowns on silicon nitride.—Fig. 8: The restoration is cleaned with steam—Fig. 9: Application of the wash paste.
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For more information please ask your local dental dealer.
Case 2: 44-year-old patient: posterior bridge with zirconium oxide framework

**Pre-operative situation**

After successful periodontal treatment, the interdental space between teeth 15 and 17 had to be closed. Both abutment teeth 15 and 17 were vital. Tooth 15 was crowned; tooth 17 showed a two-surface, mesio-occlusal restoration (Fig. 14).

**Planning**

The interdental space between 15 and 17 was to be closed with an adhesively luted, all-ceramic inlay/crown-retained bridge with a zirconium oxide framework on which the veneering ceramic was to be pressed and layered in some areas. From a technical point of view, the easiest and best solution in this case was to press IPS e.max ZirPress onto the zirconium oxide framework. On the one hand, this allows the complete occlusal surface to be designed with a proven wax-up. On the other hand, the inlay in tooth 17 is much easier to fabricate by means of the press technique than by the layering method. The translucent LT ingot was used to ensure ideal adaptation of the restoration to the residual tooth structure.

**Preparation and fabrication of the restoration**

Abutments 15 and 17 were prepared according to a crown preparation with a pronounced chamfer on tooth 15 and an MO inlay preparation with a proximal shoulder on tooth 17 (Fig. 15). In the occlusal area, 1.5 mm were available for the bridge framework and veneer.

After sulcus management, elastic impression taking, facebow transfer, and registration of the horizontal and vertical jaw relation to the intercusption position, the super hard stone models were mounted on a semi-adjustable articulator to fabricate the inlay/crown-retained bridge 15-17.

**Fig. 15**

The zirconium oxide bridge framework was milled from the IPS e.max ZirCAD zirconium oxide block using the inLab system. The sintered zirconium oxide was fitted to the master model. Once the framework was finished, a suitable shade of ZirLiner was applied and the framework was fired (Fig. 16).

A translucent pressed ceramic was used to press a circular shoulder to tooth 15 and the side walls of the inlay in tooth 17.

**Fig. 16**

**Wax-up and preparation for the press procedure**

A modelling wax that burns away without leaving a residue was used for the wax-up. The teeth were modelled fully anatomically. A small portion of incisal material was applied only in the buccal and lingual areas (Fig. 17).

If the pontics in the posterior region are voluminous, it is recommended that a ring-shaped sprue (Fig. 18) be applied to achieve a de-tailed reproduction of the pontic (Fig. 19).

**Completion**

After the sprues had been removed and the restorations completely fitted on the master model, a little space was provided for the build-up in the incisal area (Fig. 20).

To complete the anatomical form, the incisal area was built up according to the free layering technique with IPS e.max Ceram (Fig. 21).

Finally, the restoration was stained with IPS e.max Ceram Shades and Essence materials and glazed (Figs. 22A–C).

The basal view shows the central white-opaque IPS e.max ZirCAD zirconium oxide bridge framework, which was covered with the IPS e.max ZirPress veneering ceramic in the occlusal area and in the area of the preparation margins. IPS e.max ZirPress is suitable for the adhesive technique.

An inlay-retained bridge or a combined version, such as an inlay/crown-retained bridge, has to be adhesively seated in order to achieve the clinically required retention and strength of the construction. As the zirconium oxide bridge framework exhibits only a very low translucency, a chemically or dual-curing adhesive and luting composite have to be used to ensure complete polymerisation.

In the present case, the preparations were isolated by means of electroerosive sulcus management, iron-III-sulphate application, and the placement of retraction cords (Ultrapak, Ultradent). Excess cement was removed with foam pellets, brushes, and dental floss immediately after placement before the restoration was light-cured. At the cementation joint, a brush should be preferred to a foam pellet to prevent the luting composite from being wiped out of the cement margin. Figures 25A to C show occlusal and buccal aspects of the restoration in situ: the fully veneered inlay/crown-retained bridge seamlessly blends in and the surrounding soft tissue looks vital.

**Conclusion**

The IPS e.max system currently offers ceramic materials for the fabrication of single tooth restorations (crowns, partial crowns, veneers) and 5- to 6-unit bridges in the press and CAD/CAM techniques. Dental technicians can work with only one layering ceramic on the different framework materials and thus cover virtually all indications in all ceramics. Dental technicians will appreciate the benefit of having to handle only one veneering ceramic, which will enable them to fabricate predictable restorations more efficiently.

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Miniscrews—a focal point in practice

Six-part series by Dr Björn Ludwig, Dr Bettina Glasl, Dr Thomas Lietz & Prof. Jörg A. Lisson—Part II

Basic information on the insertion of miniscrews

Preparing for insertion

The insertion of a miniscrew is a very simple and rapid therapeutic measure. Although there are several methods that will yield good results, successful insertion requires adherence to a few important principles. The following text details those insertion steps that offer a high degree of safety for both patient and dentist (see checklist for insertion below). It should be noted that this information is generalised and must be adapted to individual circumstances.

Checklist for insertion

Pre-operative planning and preparation:
• planning documentation (X-rays, situational models);
• marking the maxillo-gingival line and tooth axes on the model, determining the site of insertion;
• sterilisation of the instruments and preparation of the worksta-
tion.

Anaesthetic and assessment of the insertion site:
• anaesthetic;
• use of X-ray side; and
• control image.

Selection of the screw:
• measuring of the thickness of the mucous membrane (optional);
• determination of the length; and
• determination of the type of screw.

Transgingival penetration:
• excision of the mucous mem-
brane or perforation with the screw.

Preparation of the bone site:
• optimal marking of the bone; and
• perforation of the cortical bone or deep pilot drilling, depending on the type of screw.

Insertion of the miniscrew:
• manually or by machine.

Start of orthodontic measures:
• starting and fixing of the linking elements.

Post-operative care:
• notes on care and behaviour; and
• check-up dates.

Removal of the miniscrew:
• removal of the linking elements; and
• removal of the miniscrew.

General notes on insertion

Accurate pre-operative planning is a basic requirement for successful treatment with miniscrews. Such planning includes a comprehensive anaamnesis and an accurate assessment of the findings. It is essential that the treatment be thoroughly explained to the patient.

Proper hygiene must be ensured throughout the entire operation. Both the dental chair and the treatment process must be prepared with this in mind. During the insertion of a miniscrew, adherence to all hygiene measures requires for an invasive procedure, such as a sterile work environment, and gloves, must be ensured. All instruments required for insertion must be checked for completeness, functionality, and sterility. The patient may rinse with a disinfectant solution, or a suitable disinfectant can be locally applied. The patient should then be positioned to ensure a clear view of the operatory area and ergonomically facilitate insertion for the treating dentist.

Anesthetic

During the interradicular insertion of a miniscrew, the sensitivity of the periodontal tissue of the adjoining teeth should be reduced. For this reason, the following two procedures are recommended:

a) a low-dose injection of approximately 0.5 ml anaesthetic (Figs. 2.4a & b); and
b) the induction of superficial anaesthesia of the mucous membrane at the insertion site, for which a topical anaesthetic gel is suitable (Figs. 2.5a & b).

Choice of screw

Measuring the thickness of the mucous membrane (optional)

A pointed sensor with an attached rubber ring is used to measure the thickness of the gingival tissue in the direction of insertion (Fig. 2.6). This information may be useful when determining the final length of the screw and possibly when inserting the miniscrew. When choosing the length, the bone repository and the thickness of the mucous membrane in the direction of insertion play a role; in the retromolar section of the lower jaw and in the palate, the thickness of the mucous membrane is often more than 2 mm. The part of the miniscrew inside the bone must be at least as long as the part outside the bone. The various dimensions must be taken into account.

The thickness of the bone in the direction of insertion deter-

Figs. 2.4a–b: Injection pen with needle and anaesthetic cartridge, and injection of anaesthetic.

This is because, depending on the positioning of the X-ray tube, object, film, and/or sensor, all types of X-ray devices and images may yield some optical distortion. Interpretation of images can thus lead to false-negative or false-positive results (Figs. 2.2a–c).

Therefore, the placement of a miniscrew should always be based on the clinical findings. If a miniscrew is to be inserted into an area in which there is no risk of damage to roots, nerves, or blood vessels (e.g. into the palate just behind the transverse line linking the two canines), the position of the screw may be freely chosen (Figs. 2.5a–c).

Anaesthetic

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mines the required length of the miniscrew:
• bone thickness > 10 mm: mini-
screws with a length of up to 10 mm are to be used;
• bone thickness < 10 mm and > 7 mm: miniscrews with a length of 8 mm or 6 mm are to be used; and
• bone thickness < 7 mm: miniscrews with a length of 16 mm or 13 mm are to be used.

Fig. 2.6 Measuring the thickness of mucous membrane in the direction of insertion. (Photo: Dr Pohl)

Figs. 2.1a–c: X-ray positioning aid (X-ray pin, FORESTADENT) shown in situ in relation to the adjoining tooth axes.

The insertion of a miniscrew is to be inserted into the first and second quadrants of the upper jaw (in the 6–5 region) to check the bone site, followed by a view of the area in which the miniscrew is to be inserted in a manner that is clinically safe, but the X-ray images show damage to the adjoining root in the right-handed quadrant, indicating a false-positive initial interpretation of the situation.

The clinical image shows two miniscrews inserted into the palate in the safe zone to the distal side of the transverse line linking the two canines. The FRM and the PA image confirm the bone support in the insertion region.
• in the lower jaw: usually 6 mm
• in the palate (depending on the region): 6, 8 or 10 mm;
• in the buccal region of the upper jaw: 8 mm or 10 mm;
• in the lower jaw) both self-cutting and self-tapping screws cannot be used.

The following guidelines aid in selecting the length:
• in the buccal region of the upper jaw: 8 mm or 10 mm;
• in the palatal region (depending on the region): 6, 8 or 10 mm; and
• in the lower jaw: usually 6 mm or 8 mm.

Determination of the type of thread
Self-cutting miniscrews require pre-drilling (also known as pilot drilling) appropriate to the length and diameter of the screw, as well as to the quality of the bone. A self-tapping miniscrew will find its own way into the bone and requires no pre-drilling (Figs. 2.7a & b). Bone is more or less elastic depending on site, age, and structure. However, the screw diameter, the thickness of the cortical bone, and the hardness of the bone at the insertion site limit the extent to which this method can be used. Without pre-drilling, the bone will be strongly compressed during insertion and thus suffer a related tension stress. This may result in the cracking of the bone around the insertion site. When the screw is screwed into the bone, it is subjected to high loads. Depending on the bone quality, the resistance against insertion, and the continuity of the rotational movement, high torsional forces can result. In regions with thick cortical bone and a much looser bone structure (e.g. the upper jaw), the use of self-tapping screws is recommended. In regions where the cortical bone is thick and the bone structure is dense (e.g. the anterior lower jaw) both self-cutting and self-tapping screws may be used, in each case following perforation of the compact bone.

Transgingival penetration
The miniscrew must penetrate through gingival tissue, which must thus be perforated during insertion. Two methods are used for the perforation of the gingival tissue:

a) excision of the gingival tissue; or
b) direct insertion of the screw through the gingival tissue.

There are currently no published studies that investigate the effect of these two methods on post-operative problems, histological effects, and/or the loss rate of miniscrews.

Preparation of the bone site
Protection of the bone is an important aspect. Insertion without pre-drilling results in tensional stress within the bone, which may lead to post-operative complications. Particularly in the case of crestally placed screws, bone displacement may result in a severe expansion of the periosteum. The thickness of the cortical bone, especially in the lower jaw, can have a significant effect on the torque of the screw. To ensure that the screw is not overloaded during insertion, the compact bone of the anterior lower jaw should be perforated by pre-drilling as mentioned earlier. Pre-drilling should be done at a maximum of 1,500 rpm, using a short pilot drill and water-cooling to reduce the risk of damaging the root (Figs. 2.8 a & b).

Insertion of the miniscrew
The miniscrew must be removed from its sterile packaging (Figs. 2.10 a–d) without contamination. The thread of the screw may not be touched. The screw should be inserted at a constant rotational speed (at approximately 50 rpm) and with uniform form a torque as possible.

Manual insertion
Manufacturers supply various screwdrivers and blades in several lengths for the manual insertion of the screws. Because of their dimensions, long blades pose the risk of obtaining a very high torque during insertion. Thus, insertion must be carried out carefully to avoid breaking the miniscrew. Torque ratchets are available for use with some systems (e.g. tomas, DENTAURUM; and LOMAS, Mondeal), which provide a certain amount of control over the insertion torque.

Figs. 2.7a & b: Diagrams showing the thread mechanisms: self-cutting and self-tapping.

Figs. 2.8a & b: Pre-drill with a 4 mm long blade and limit stop. Drill (FORESTADENT) and tomas-drill SD DENTAURUM.

Figs. 2.9: Sterile miniscrew pin, DENTAURUM). Supplied in pin-holder (tomas-pin, DENTAURUM).

Figs. 2.10a–d: Preparation of the work rack and removal of the blades.

Figs. 2.11a–f: Preparation of the instruments and insertion of two miniscrews into the palate by machine.
Machine insertion

Machine insertion requires a surgical treatment unit (the torque of which can be controlled) or at least a low-rpm dual green handpiece. Accurate setting of the torque and the number of rotations is required; the rotation rate should not exceed 30 rpm⁻¹, and the torque must be restricted to the maximum load limit of the screw.

Machine insertion helps to achieve a consistent torque during insertion but means that the operator loses perception of the bone. During manual insertion, it is possible to perceive the interaction between the screw and the bone by tactile senses. Insertion by machine is shown in Figures 2.11a–f.

Attaching the orthodontic linking elements

As no healing phase is required, load may be placed on the miniscrew immediately after insertion. The selected linking element must be prepared accordingly and attached to the head of the screw (Fig. 2.12).

To avoid damage to the teeth to be moved, the load on the linking element should be between 0.5 and 2 N (about 50 and 200 g).

Basic post-operative care

The healing of the gingival tissue and hygiene status after insertion must be regularly reviewed during the entire time that the miniscrew remains in place. The patient must be informed that any manipulation of the screw head with the fingers, tongue, lips, and/or cheeks should be avoided, otherwise the screw may be prematurely lost.

Removal of the miniscrew

A miniscrew can be removed under local anaesthetic. After the linking elements have been removed, the miniscrew may be removed with the same tools used for insertion. The resulting wound requires no special care and usually heals within a short time.

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The old landlady is waving to visitors from afar. In Lionas Bay, however, no further invitation is needed to indulge in dolmades and satsaki, followed by a serving of grilled fish. During the off season, the remote beach strip is not the northern part of Naxos is only inhabited by a dozen people, all making their living at the local taverns. The few visitors, who stray from the main roads and wander down the narrow, dusty path, are treated to a delicious meal and home-made wine bottled in plastic water bottles—one of the many provisions arrangements you are certain to fall in love with.

On the airy decks, weekenders unite at the waterfront of Piraeus in Athens three times a day. Tours take the ferries that leave from the entrance to an unfinished temple at Glinado, to the centre of Apollonas; the Dimitra temple of Demeter in the Naxos-City centre; the unfinished Kouros statue; the iconic Portara, the Venetian Museum; the Temple of Demeter in the Naxos-City centre; the unfinished Kouros statue of Apollo; the Dhimata temple near Sangri, and the Dionysus temple at Glimos, to the centre and north of the island. Agia Anna and Plaka, just outside Naxos-City, are the most well known beaches. But only a few kilometres south, a remote and beautiful beach is followed by another, connected by a dusty road meanders invitingly down to Lionas Bay, and the journey is absolutely worth it as the landlady is sure to be expecting you already.

Naxos lures locals, as well as tourists, with a more peaceful ambience nowadays. Visitors are greeted by the iconic Portara, the entrance to an unfinished temple from the 5th century BC. Although Chora—as the capital is called by locals—has an airport, most visitors take the ferries that leave from Piraeus in Athens three times a day.

The old landlady is waving to visitors from afar. In Lionas Bay, however, no further invitation is needed to indulge in dolmades and satsaki, followed by a serving of grilled fish. During the off season, the remote beach strip is not the northern part of Naxos is only inhabited by a dozen people, all making their living at the local taverns. The few visitors, who stray from the main roads and wander down the narrow, dusty path, are treated to a delicious meal and home-made wine bottled in plastic water bottles—one of the many provisions arrangements you are certain to fall in love with.

Upon exploring the Hellenic civilisation, the famous German writer Johann Wolfgang von Goethe remarked, “Of all peoples, the Greeks have dreamt the dream of life best.” On Naxos, this dream is still much alive. According to the myth, Dionysus and Ariadne were married here. Like the gods, the island combines opposites that make it attractive: white sandy beaches cover the southern coast, while sparse mountain ranges and solitary villages dominate the northern regions.

Tourists with cookers and fruit. Security instructions should always be followed, since the ferries here tend to be overcrowded. Only recently have ferry workers protested against their poor working conditions.

With an area of 500 square kilometres, Naxos is the largest island of the Cyclades, yet, it managed to resist the mass tourism that swept through Greece in the 1980s and 1990s. As a result, you will not be able to find resorts or big holiday complexes that are common on other islands, like Crete and Rhodes. Instead, the island offers a vast number of decently priced apartments that will make you forget the buffet when you can enjoy breakfast on your sea-view balcony. The tourism business has brought moderate wealth to Naxos, which was formerly known only for its marble mining industry and its excellent citrus liquor.

There is plenty to explore on the island: the still intact, picturesque Castro in Naxos-City with the Venetian Museum; the Temple of Demeter in the Naxos-City centre; the unfinished Kouros statue of Apollo; the Dhimata temple near Sangri, and the Dionysus temple at Glimos, to the centre and north of the island. Agia Anna and Plaka, just outside Naxos-City, are the most well known beaches. But only a few kilometres south, a remote and beautiful beach is followed by another, connected by a dusty road that challenges even the most experienced drivers.

A dusty road meanders invitingly down to Lionas Bay, and the journey is absolutely worth it as the landlady is sure to be expecting you already.

More information can be found at www.visitgreece.gr

**What’s on**

**CINEMA**

**FOOD, INC.** is the latest documentary to hit the screens—and it is a powerful one. With the use of clever animations and compelling graphics, the filmmakers—Producers/Director Robert Kenner and investigative authors Eric Schlosser (Fast Food Nation) and Michael Pollan (The Omnivore’s Dilemma)—expose how highly mechanised today’s food industry is. They furthermore reveal how a handful of corporations control the food supply, while scientists manipulate the very DNA of the animals we eat so that they grow faster, feed more efficiently and even taste different.

The film was received with much controversy at the Berlin Film Festival in February. It will be shown at other festivals before it is released in cinemas worldwide.

**TECHNOLOGY**

The Geneva Sound Home Theater from Geneva Lab in the US is a hybrid of high-quality furniture and high-fidelity electronics. It’s also the latest in iPod/iPhone accessories and a post TV stand. The stereo system features 2.1 surround sound with Embracing Sound DSP technology, an all-digital 700 W amplifier, seven speakers, as well as a rocking 12-inch subwoofer. An integrated dock lets you store your iPod or iPhone. There’s also extra interior space for components such as a cable box, DVD/Blu-ray player, game console or Apple TV.

The Geneva Sound Home Theater comes in black or white and can be yours for US $5,999. www.genevalab.com

**DINING**

The Italian restaurant Isola Bar and Grill at the waterfront of IFC Mall in Hong Kong offers spectacular views over the Victoria harbour. Opened in 2004, it was voted Hong Kong’s Best new restaurant by readers of IFA magazine. Fortunately, the restaurant does not rely only on its scenic location but also offers simple and authentic cuisine. Chef Gianni Caprioli says he uses “common ingredients cooked uncommonly well” as evidenced in his baked breded buffalo mozzarella or stone-baked whole sea bass with tomato, asparagus and black olives.

www.isolabarandgrill.com

**DESIGN**

The Stop Playing with Yours concept piece by designers Schamburg & Alvisse from Sydney in Australia is a new furniture concept based on a classic wooden puzzle. The 11 foam elements can be rearranged in a way that lets you decide whether you want them to be a sofa, chair, table, or even a bed in your living room or practice. The pieces are available in pink and grey. The retail price per piece is AU$859 (US$829).

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