Billions to suffer from untreated decay
Dental neglect affects a third of the world’s population, according to report

LONDON, UK: Despite worldwide efforts to improve oral health, a new global study has revealed that 33 per cent of the world’s population currently suffers from untreated caries lesions in their permanent teeth. It also found that 621 million children worldwide have tooth decay that goes untreated.

To make things worse, hundreds of millions of new cases are expected to add to the burden of dental decay annually owing to neglected treatment, according to the paper published by researchers from the UK, the US and Australia in the latest Journal of Dental Research.

Even developed countries are affected, with one in three people in the UK suffering the consequences of neglected treatment, along with one in five in the USA, for example.

The findings which are part of latest Global Burden of Disease study involved a systematic review of all data on untreated dental decay, leading to a comprehensive report on rates of tooth decay for all countries, age groups and genders from 1990 and 2010. The team said to have analysed 192 studies of 1.5 million children aged 1 to 14 years old, across 74 countries, and 186 studies of 5.2 million people aged five years or older, across 67 countries.

Hundreds of millions of new cases are expected to add to the burden annually. (Photo Greta Gabaglio)

The Australian Dental Industry Association (ADIA) has advised the government panel currently reviewing medical device regulation in Australia to strengthen the regulatory framework for dental laboratory products. In particular, ADIA pointed out that there is a need for an obligatory statement of manufacture to be provided to patients and retained by dentists.

ADIA’s recommendations arise from the increasing prevalence of dental laboratory products sourced from overseas and the inability to readily identify the source of the products, the association stated.

While the regulatory standards for design, performance and manufacture of these devices are appropriate and do not require revision, ADIA believes that there is a need to consider revision of regulations governing the information provided to patients. It has thus called for a new regulation that will require companies that offer custom-made medical devices to provide a statement of manufacture in the future.

Thorough dental care helps retain youthful looks

SARNBROOK, UK/LEIDEN, NETHERLANDS: A new study on lifestyle and appearance has linked personal effort in oral hygiene to perception of facial age.

The researchers found that Dutch women with few remaining teeth were associated with a total perceived facial age of 10.9 years higher than their actual age. In comparison, Dutch men with dentures who did not floss were significantly associated with a total perceived facial age of 9.3 years higher. Similar findings were made in the British group, as English women who cleaned their teeth only once a day and wore dentures had a total perceived facial age of 9.1 years higher than women with natural teeth and a comprehensive oral routine.

The number of teeth and the condition of the surrounding gums are known to directly influence the appearance of overlying tissues. For example, people look younger with their mouths closed after receiving new dentures, and the number of teeth or the use of dentures has been linked to lip size and the appearance of the labio-mental fold,” stated Dr David Gunn, a senior scientist at Unilever.

The authors stressed that oral care aspects could possibly have been proxies of other lifestyle factors, such as diet. However, dental aspects were significantly associated with perceived facial age in the groups studied.

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Oceania to implement the Minamata Convention

DT Asia Pacific

APIA, Samoa: The first subregional meeting on the Minamata Convention on Mercury in the Oceania region was held in Samoa’s capital, Apia, from 19 to 21 January. The workshop aimed to support Pacific islands in the early ratification of the convention and implementation of measures to protect human health and the environment from the adverse effects of mercury.

The meeting was attended by representatives of the Cook Islands, Federated States of Micronesia, Kiribati, the Marshall Islands, Nauru, Palau, Papua New Guinea, Samoa, Tonga and Vanuatu. Over the course of three days, participants were introduced to the various articles of the convention and learnt about the obligations that countries are required to take in implementing it at a national level. Samoa’s Prime Minister Tuilaepa Sailelei Malielegaoi called upon United Nations Environment Programme, the Secretariat of the Pacific Regional Environment Programme and other UN agencies to assist Pacific island countries in this effort.

Malielegaoi’s country was among the 87 countries that first signed the treaty in October 2013. At a regional conference held last year, it recognised that the sound management of waste and chemicals is crucial for the protection of human health and the environment. However, there are limitations of adequate institutional and border controls for managing mercury and other hazardous wastes, as well as a significant lack of data regarding levels of mercury, particularly in Pacific fish, Malielegaoi said.

The Minamata Convention on Mercury was signed in October 2013. In adopting the treaty, governments agreed on the development and implementation of national strategies to reduce or eliminate the production and industrial use of the harmful substance. The treaty has implications for the dental industry, among others, as dental amalgam contains about 50 per cent mercury. It is considered a significant source of mercury released into the environment.

Since the signing of the treaty, workshops have been organised in different parts of the world in support of the ratification and early implementation of the Minamata Convention on Mercury. According to the United Nations Environment Programme, the aim of workshops is to improve understanding of the convention as well as familiarise parties with the process of signing, ratification and implementation.

Informed participants about available sources of support and creating opportunities for exchange and action in the subregions are also part of the process.

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WAUPS extends invitation to Korea congress on ultrasonic piezoelectric surgery

DAEGU, South Korea: The World Academy of Ultrasonic Piezoelectric Bone Surgery (WAUPS) is inviting dental professionals interested in the field to attend its next congress, which is to be held in Busan in South Korea from 1 to 3 May. It will be the largest event ever hosted by the organisation. The meetings on Jeju Island and in Gyeongju in South Korea and in Tokyo in Japan all saw an overall attendance of 700 each.

Congress Chairman Jung-Uk Heo has encouraged professionals to attend the congress, as it will be a great opportunity to exchange scientific information and foster friendships. He said that early bird registration ends on 31 March.

To be held at the Haeundae Grand Hotel in Busan, the event will feature distinguished speakers of international repute from Korea and overseas. Among others, the organisation has invited Prof. Dong-Seok Sohn, Chairman of the Department of Oral and Maxillofacial Surgery at the Catholic University of Daegu, to present as part of the scientific programme. Drs Cleopatra Nacopoulos (Greece), Domenico Baldi, Enzo Rossi and Ezio Gheno (all from Italy), as well as Dr Eric Park (USA), are also going to attend as international speakers.

The programme will be complemented by a number of pre-congress courses and workshops. In addition, WAUPS will hold one of the largest dental trade exhibitions in the field, presenting innovative products and offering discounts to registered participants.

The first international academy specialising in ultrasonic piezoelectric surgery, WAUPS was established in 2012.

Women chew differently

JECHEON, Korea: In a comparison of bite size, grams of food ingested per minute, chewing power and total meal duration, among other factors, researchers from Korea have found substantial differences between the sexes for each parameter. While men took larger bites and ate faster, women chewed at the same pace as men did but gave more chews per mouthful, thus increasing their meal duration significantly.

The study included 24 men and 24 women. Using electrodes attached to the skin overlying the muscles of mastication, the researchers measured bite size, chewing power, chews per gram, the total number of chews, and other factors while the participants chewed a portion of 152 g of boiled rice.

The analysis found that bite size and chewing power were significantly higher in the male than in the female participants. Eating rate was also significantly faster in men than in women. Chews per gram were significantly higher in females than in males; however, chewing speed did not differ between the sexes. Therefore, meal duration was significantly longer for women than for men.

“The results of this study clearly showed that females take smaller bites and chew thoroughly with a weaker chewing power than males, while they consume the same amount of staple food,” the researchers concluded.
Dear Reader

By the time you read these words, I will again be at the International Dental Show, which is taking place from 10 to 14 March in Cologne in Germany.

A regular participant since 2005, I have watched the event grow into one of the largest dental industry showcases in the world, packed with all the latest tools and gadgets to make a dentist’s heart rejoice. It’s an irony that at the same time a new report has estimated that over two billion people around the world are suffering from untreated dental diseases, and it is predicted that the numbers will not improve significantly any time soon.

When one considers this in light of all the fancy technology for advanced treatment nowadays, it is clear that research and development should be directed into preventive treatments and products and that it is essential to invest in prevention.

Yours sincerely,
Daniel Zimmermann
Group Editor
Dental Tribune International

The right number of dentists?

A letter from Dr Rick Olive, Federal President of the Australian Dental Association, and Len Crocombe, Chairman of the association’s Dental Workforce and Education Committee

The article “Dental migration: A forgotten perspective” (Dental Tribune Asia Pacific, 11/2014, page 10) gives an interesting account from the migrating dentist’s point of view. It discusses how to streamline dentist migration policy, but misses the main issue that the aim of immigration policy in countries such as Australia is to help ensure that Australia has the right numbers and mix of dental practitioners to address the oral health needs and requirements of its citizens. It should be asked whether it is appropriate that countries such as Australia, which can afford to train its own dental practitioners, be importing dental practitioners, many of whom come from developing countries with insufficient workforce demand in excess of supply, all scenarios presented the same result—that across the projection period the supply of the oral dental workforce is projected to exceed the demand.”

To quote from the report:
“Seven alternative planning projection workforce scenarios were developed, examining changes in demand, immigration, the number of graduates, productivity, an existing workforce supply in excess of demand, an existing workforce supply in excess of demand, and existing workforce demand in excess of supply. All scenarios presented the same result—that across the projection period the supply of the oral dental workforce is projected to exceed the demand.”

The worsening oversupply in the dental workforce is due to a number of factors: growth in the number of students graduating from Australian universities, changes to international student visa conditions that allow students to remain and work in Australia, a significant increase in the number of dentists entering Australia through temporary and permanent migration pathways, ease of migration through the Trans-Tasman Mutual Recognition Agreement, and an increase in intranational numbers of allied dental practitioners.

Australian graduates and migrating dentists are now finding meaningful employment difficult to achieve. Several state governments have removed dentists from their Skilled Occupation List. For these reasons, the Australian Dental Association is seeking the removal of the occupations of dentist and dental specialist from the Skilled Occupation List from the Commonwealth and remaining state government lists and advises many dentists considering migrating to Australia to realistically assess their prospects of employment before they move to Australia.

Contact Info

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Andrea Fabianelli
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Details & Online Registration

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Registration fee: 599 EUR +VAT

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SAN ANTONIO, USA: Diabetic patients with poor glycaemic control may be rejected as candidates for dental implants because the condition has long been associated with adverse effects, such as slow healing and high infection risk. A new study, however, has shown that even patients with poorly controlled diabetes have a high success rate with implants after one year.

In order to evaluate the effects of glycaemic levels on implant-related outcomes, researchers at the University of Texas Health Science Center at San Antonio studied the data of 110 edentulous patients who received mandibular implant-supported overdentures. The participants were divided into three groups: patients without diabetes, patients with controlled diabetes and patients with poorly controlled diabetes.

After a follow-up period of one year, the researchers found no significant differences between the study groups. Diabetic and non-diabetic patients had a nearly 100 per cent implant survival rate. Participants with poorly controlled diabetes only required a longer period for the implant to heal before placing the dentures, explained Dr Thomas Oates, the interim Associate Dean for Research and Assistant Dean for Clinical Research at the university. He is also a professor and vice chairperson in the Department of Periodontics.

Overall, only two implants failed during the study period but were later replaced with new implants. These implants healed and did not fail over the course of one year.

The findings of the study indicate that the effects of hyperglycemia on implant therapy remain uncertain. In addition, they suggest that patients with compromised glycaemic control may gain important benefits from implant therapy with respect to dietary management of their diabetic condition.

However, more investigation is needed before drawing major conclusions, Oates stated.

Diabetes is one of the most common systemic conditions in the US. According to the Centers for Disease Control and Prevention, the number of Americans with diagnosed diabetes more than tripled from 5.6 million in 1980 to 20.9 million in 2011.

It is estimated that more than 90 per cent of patients with diabetes in the US have Type 2 diabetes.
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“It is our mission to simplify dental implantology”

DTI visits the MIS headquarters and main production facility in Israel

MIS Implants Technologies is a global specialist in the development and production of advanced dental implantology products and solutions. The company, which started as a family-run business, was founded in 1995—a time when not many people understood the potential of dental implants, CEO Idan Kleifeld told Dental Tribune International (DTI) at a meeting at the beginning of 2015.

Since its beginnings, MIS has seen significant growth, especially within the past ten years. “Today, the company has succeeded in building a recognised global brand in the market and is the only non-premium company operating on a global scale,” Kleifeld said. Headquartered in Israel, MIS currently has operations in 65 countries worldwide, covering major dental markets, such as the US, China and Germany, through a well-established network of local distributors.

In 2009, MIS moved operations to a large purpose-built production complex located in a new high-tech industrial park in northern Israel. “Our location adds to our uniqueness. Israel is a country of high innovation and offers particularly favourable conditions for manufacturing, because of the quality of education and people’s high levels of motivation. Furthermore, salaries are much lower than in competitor countries, making manufacturing especially profitable,” he stated.

The MIS building in the Bar-Lev Industrial Park spans about 10,000 m² and has two productionfloors with 50 Swiss high-precision machines running 24 hours a day from Sunday to Friday. “The facility was designed and built for growth. In the near future, our automatic warehouse, which currently covers only half of its potential area, will double in size,” Kleifeld explained.

DTI further learnt that MIS primarily produces for stock, as products must be shipped to local distributors within two working days. For increased efficiency, processes controlling quality, sterilisation, packaging and storage are largely automated. This allows MIS to produce over 800,000 implants per year.

The production site in Israel has a dedicated training centre with a fully equipped dental clinic for live surgeries. Kleifeld said, “We see education as an important tool to acquire new customers, especially in developing markets. It is an important driver in this business, and we offer doctors both fundamental and advanced training courses on MIS products and protocols.”

In 2015, MIS will be introducing some important innovations. Only recently, the company officially opened its MCENTER Europe, the new MIS digital dentistry hub in Berlin in Germany, in order to meet the needs of its growing customer base in central Europe. The centre offers direct services provided by locals to local customers, bringing all MIS digital dentistry products together in one location. It is aimed at providing a comprehensive range of services to clinicians through advanced digital dentistry and CAD/CAM technologies that facilitate fast and accurate surgical implant procedures with reduced chairside time and greater predictability in outcomes.

“We are extremely excited about the opening of the new MCENTER Europe facility, and especially proud to be able to offer MIS quality and simplicity in providing our customers throughout the region with highly accurate and efficient guided implant placement procedures and CAD/CAM solutions,” said Christian Hebbecker, MCENTER Europe Manager.

In addition to the new MCENTER Europe, the company will be entering the premium segment for dental implants with the launch of a new implant system later this year. It has a track record and consists of high-quality implants that are completely new in the market and will fit within the premium segment. MIS plans to offer this new implant system to its global distributors at the end the second quarter of 2015, for local distribution worldwide.

The name MIS originally stood for “Medical Implant Systems”. However, it is also an acronym that reflects the company’s main maxim to “Make it Simple”. “It is our mission to simplify dental implantology and, in order to become the preferred choice of dentists worldwide, we offer new and innovative products based on simple, creative solutions. Design and handling are made simpler, and all products are engineered to allow efficient, time-saving surgical procedures,” Kleifeld said.

“This simplified approach, we are set to become the largest global dental implant producer,” he added.

However, the “Make It Simple” motto appears to apply to more than the company’s products. The MIS philosophy defines almost all areas of the business (from human resources to production), and the organisational structure is simple and characterised by flat hierarchies. “Make it Simple” embodies the start-up mentality that remains vibrant in a company that has become one of the largest in the global dental implant market.
Beyond the Ultrasonic Piezoelectric Bone Surgery

**WCUPS 2015**

World Congress of Ultrasonic Piezoelectric Bone Surgery 2015

**Beyond the Ultrasonic Piezoelectric Bone Surgery**

**1(Fri)~3(Sun). May**

**Haeundae Grand Hotel, Busan, Korea**

**Congress Chairman of WCUPS 2015**  
**Jeong-Uk Heo**

**President of WAUPS**  
**Dong-Seok Sohn**

**Topics**
- Antiaging Therapy
- Stress Free Sinus Augmentation
- Minimally Invasive Ridge Augmentation
- Computer Guided Implant Surgery
- Computer Aided Implant Restoration

**Important Dates**
- Pre-Registration Deadline: March 31, 2015
- Abstract Submission Deadline: March 31, 2015
- Hotel Reservation Deadline: March 31, 2015

**Invited Speakers (in alphabetical order)**

Dr. Claudia Novello, Italy  
Dr. Cleopatra Nacopoulos, Greece  
Dr. Domenico Rubía, Italy  
Prof. Dong-Seok Sohn, Korea  
Dr. Dario Rossi, Italy  
Dr. Eric Park, USA

Dr. Edi Gheno, Italy  
Prof. Giuseppe Cardaropoli, Italy  
Dr. Hiroshi Wake, Japan  
Dr. Horia Barba, Romania  
Prof. Hyung Min Kim, Korea  
Prof. Ioannis P. Georgakopoulos, Greece

Dr. Am-Yun Lai, Canada  
Dr. An Kim, USA  
Dr. Satoshi Koga, Japan  
Dr. Seong-Joo Moon, Korea  
Prof. Zia Nazir, Israel

**WCUPS 2015 Pre-Congress Workshop**

May 1(Fri) 2015, Haeundae Grand Hotel, Busan, Korea

**Workshop 1.**  
Minimally Invasive Sinus Augmentation using Ultrasonic Piezoelectric Bone Surgery, Autologous Concentrated Growth Factors and Autologous Fibrin Glue. Hands on workshop and live surgery demonstration  
**Prof. Dong-Seok Sohn**

**Workshop 2.**  
Anti aging with your own blood  
**Dr. Cleopatra Nacopoulos**

**Workshop 3.**  
Immediate Implant Placement, Ridge Preservation and Vertical Bone Regeneration in the Esthetic Zone: reality & dogma, hands on workshop and live surgery  
**Dr. Giuseppe Cardaropoli**

**Workshop 4.**  
IPG-DentistEdu Technique: Sinuses Bone Augmentation without Sinus Floor Elevation  
**Prof. Ioannis P. Georgakopoulos**

For more information, please visit our website! 2015.wcups.org
Knowledge can save lives
Understanding and treating patients with eating disorders

Table 1: Medical complications of eating disorders

<table>
<thead>
<tr>
<th>General</th>
<th>Digestive system</th>
<th>Extremities</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Dehydration, malnutrition</td>
<td>• Diarrhoea</td>
<td>• Chilled fingers* related to cardiac complications or severe laxative abuse</td>
</tr>
<tr>
<td>• Fatigue</td>
<td>• Vomiting (including forced vomiting)</td>
<td>• Cold hands and feet related to peripheral vasodilation</td>
</tr>
<tr>
<td>• Anaemia</td>
<td>• Abdominal pain</td>
<td>• Carotenoderma, orange pigmentation of skin, especially on the palms of the hands, related to excessive intake of foods containing carotenoids</td>
</tr>
<tr>
<td>• Hypoglycaemia</td>
<td>• Gastric bleeding</td>
<td>• Calluses, scars, or abrasions on the knuckles of the dominant hand, related to inserting the fingers in the mouth to induce vomiting</td>
</tr>
<tr>
<td>• Electrolyte imbalance (especially low potassium)</td>
<td>• Gastric laceration (gastro-oesophageal laceration syndrome), due to vomiting and incontinence related to misuse of laxatives</td>
<td>• Carotenoderma, orange pigmentation of skin, especially on the palms of the hands, related to excessive intake of foods containing carotenoids</td>
</tr>
<tr>
<td>• Slow pulse rate</td>
<td>• Sudden death during bingeing</td>
<td>• Increased lanugo hair—fine hair on the body and arms (the body’s attempt to regulate body temperature)</td>
</tr>
<tr>
<td>• Cardiovascular collapse</td>
<td>• Swollen salivary glands and sore throat related to purging</td>
<td>• Osteoporosis</td>
</tr>
<tr>
<td>• Low white blood cell count, and impaired immunity</td>
<td>• Stomach might rupture during bingeing</td>
<td>• Fatigue</td>
</tr>
<tr>
<td>• Muscle weakness</td>
<td>• Slow metabolism</td>
<td>• Dehydration, malnutrition</td>
</tr>
<tr>
<td>• Loss of muscle mass, causing stick-like limbs</td>
<td>• Impaired capacity to think, due to starvation-related brain changes</td>
<td>• Anaemia</td>
</tr>
</tbody>
</table>

According to the US National Institute of Dental and Craniofacial Research, 28 per cent of patients with bulimia are first diagnosed at a dental appointment. Although dentists are in an ideal position to detect the warning signs of eating disorders, research has found that knowledge of the oral and physical signs of these conditions is often limited.1

Nevertheless, we have an ethical obligation to increase our knowledge and participate in secondary prevention of eating disorders, as it could improve prognosis and even be life-saving for some patients. Research has shown that such disorders have the highest mortality rate of all psychiatric illnesses.2 We need to initiate timely interventions, to minimise damage to the oral hard and soft tissue, and instigate medical referral for access to specialists in treating eating disorders.

An overview of eating disorders
Eating disorders are psychiatric illnesses characterised by disordered eating and disturbed attitudes to eating and body image. They are often accompanied by inappropriate, dangerous methods of weight control. The three most common eating disorders are bulimia nervosa (binge-purge), anorexia nervosa (starvation) and binge-eating disorder (bingeing without purging).3 There are variations of disordered eating, including eating disorders not otherwise specified.4 These include diabulimia,5 where individuals intentionally take insufficient insulin in order to lose weight; anorexia athletica, which is obsessive, excessive exercising to the point of being detrimental to health; and binge-orexia, or muscle dysmorphia, where the individual perceives his or her body to be underdeveloped, despite having a large, muscular physique. Orthorexia nervosa is an obsession with the quantity and quality of the food consumed. The compulsive, excessive intake of food during the hours normally reserved for sleep—often getting up multiple times during the night to eat—is called night eating syndrome. Finally, there is pica, the persistent eating of non-food substances, and various food-related phobias.

The UK has the highest rate of eating disorders in Europe. Recent figures suggest that 1 in 100 British women have a clinically diagnosed eating disorder. In the US, anorexia nervosa is the third most common chronic illness among adolescents.6 Eating disorders occur mostly in females aged 15–25, but also occur in males, in children as young as 7 years of age, and in people aged over 50.

As one of the most common eating disorders, bulimia nervosa is characterised by a pattern of consumption of massive amounts of food (binge eating) and recurrent inappropriate weight control behaviours. These include purging through self-induced vomiting, abuse of laxatives and other substances, as well as behaviours such as fasting (not eating for at least 24 hours) or excessive exercise. The weight of bulimic individuals tends to fluctuate, but remains within normal limits. About one-third of bulimics have a history of anorexia nervosa, and some have a history of obesity.

During bingeing, bulimic individuals usually consume between 1,500 and 5,000 calories
within 1 or 2 hours, and have been known to consume as much as 60,000 calories in one bulimic binge. They typically eat sweet, high-calorie foods, which are easy to consume quickly, like ice cream. This is followed by depression, panic and guilt, and a compulsion to purge. These episodes occur at least twice weekly over a period of several months. Some bulimic individuals even vomit five or six times per day. Most bulimics who die do so in the act of purging.

Anorexia nervosa is characterised by a refusal to eat enough to maintain body weight within 15 per cent of the minimal normal weight for age and height (the anorexic individual is often 20 per cent to 40 per cent below a healthy body weight); they have an extreme fear of gaining weight; and a distorted body image, which results in patients believing that they are fat, even when they are emaciated; and amenorrhoea (absence of menstruation).

A significant number of anorectic individuals also purge, and some have pica; they may consume cotton balls soaked in orange juice, for example, to control hunger. The main difference between bulimia nervosa and purging anorexia is that the individual with anorexia is underweight.

Binge-eating disorder is characterised by frequent consumption of abnormally large amounts of food in one sitting, while feeling a loss of control over eating. Individuals with this disorder do not purge afterwards, but feel depressed and guilty after overeating. Most individuals with binge-eating disorder are obese, with the related increased risks of diabetes, heart disease, certain cancers, and arthritis.

Aetiology

The aetiology of eating disorders is multifactorial and not completely understood. Contributing factors, however, include living in a culture where thinness is generally admired. There are indeed unrealistic depictions of beauty and thinness in most media. At about 6 feet (1.82 m) tall and 117 pounds (53.07 kg), today’s fashion model weighs 23 per cent less than the average woman. Some overachieving perfectionists who do not fit this questionable ideal develop eating disorders. They have not only a low self-esteem, but also a distorted perception of body shape, as well as a poor body image.

The risk of a female developing anorexia nervosa increases ten to 20 times if she has a sibling with the disorder. Eating disorders often occur in individuals who have suffered physical or psychological trauma, and are frequently accompanied by other psychiatric illnesses, such as depression, anxiety, self-harm (such as cutting), obsessive-compulsive disorder, and chemical dependency.

Oral findings

Traumatic lesions on the palate and oropharynx are caused by insertion of objects to induce vomiting. Signs of nutritional deficiencies occur, such as angular cheilitis, candidiasis, glossitis, and oral mucosal ulceration. Individuals with eating disorders also experience a dry mouth related to dehydration or xerogenic medications, such as antidepresants and anxiolytics.

Vomit has a pH of about 3.8. During purging, the vomit hits the palatal aspects of the maxilla.
Lary anterior teeth. Dental erosion due to purging by vomiting becomes apparent about six months after onset. It eventually undermines the palatal surfaces and leads to incisal fractures and chipping, and overeruption of the mandibular anterior teeth. Erosion also occurs in the posterior teeth, causing perimolysis: tooth tissue surrounding restorations is eroded, leaving the restorations with a raised, island-like appearance. Eroded occlusal contacts also lead to loss of vertical dimension.

Bulimics tend to consume foods high in refined carbohydrates, and individuals with eating disorders often consume acidic diet beverages. Therefore, they have a high caries risk and impaired salivary buffering capacity. Dental hypersensitivity is also common. The loss of bone density increases the risk of jaw fracture during extractions.

Dental management of patients with eating disorders includes medical treatment of eating disorders includes nutritional therapy to treat the medical complications and the starvation-related brain changes that perpetuate the illness. This is combined with psychotherapy and medication, such as antidepressants. Individuals with eating disorders also need regular dental visits in a supportive environment, for continuing care.

Table 2: Psychological aspects of eating disorders.

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<td>Misperception of hunger and satiation</td>
</tr>
</tbody>
</table>

Bulimics tend to consume foods high in refined carbohydrates, and individuals with eating disorders often consume acidic diet beverages. Therefore, they have a high caries risk and impaired salivary buffering capacity. Dental hypersensitivity is also common. The loss of bone density increases the risk of jaw fracture during extractions.

Dental management of patients with eating disorders includes medical treatment of eating disorders. Medical treatment of eating disorders includes nutritional therapy to treat the medical complications and the starvation-related brain changes that perpetuate the illness. This is combined with psychotherapy and medication, such as antidepressants. Individuals with eating disorders also need regular dental visits in a supportive environment, for continuing care. They must be regarded as medically compromised, owing to the risk of grave medical complications, particularly cardiac arrest due to electrolyte imbalance.
The SCOFF questions*

- Do you make yourself Sick because you feel uncomfortably full?
- Do you worry you have lost Control over how much you eat?
- Have you recently lost more than One stone (6.35 kg) in a three-month period?
- Do you believe yourself to be Fat when others say you are too thin?
- Would you say that Food dominates your life?

*One point for every “yes”; a score of 2 indicates a likely case of anorexia nervosa or bulimia.

When an eating disorder is suspected, this sensitive topic needs to be approached in a non-judgemental, non-threatening manner. It is beyond our scope of practice to diagnose eating disorders, but we can present the findings of our examination to the patient. We can mention some possible causes, like acidic drinks, acid reflux or frequent vomiting. This gives the patient an opportunity for disclosure. If he or she discloses his or her eating disorder to us, he or she should be referred to his or her physician. If he or she is not ready to tell us, we can still be supportive and initiate a prevention protocol based on our clinical findings.

Definitive dental restorations cannot be completed while a patient is purging regularly, as acid erosion will compromise the restorations. Only essential restorative work should be done, to limit tooth damage and keep the patient free of pain. Pending the patient’s recovery from his or her eating disorder, the dental hygienist can provide interventions to limit damage to the oral hard and soft tissue, and relieve xerostomia and dental hypersensitivity. During dental hygiene appointments, such patients should be polished with a non-abrasive fluoride paste.

A protocol to reduce caries risk should include in-office fluoride varnish applications, plus self-applied neutral fluoride, and calcium and phosphate products, such as NovaMin, Recaldent and nano-hydroxyapatite, to remineralise and desensitise.

Xylitol-containing products, such as toothpastes, gum and candies, are also beneficial. When used for 5 minutes, five times per day, they stimulate salivary flow, reduce the oral population of cariogenic bacteria, and reduce oral acidity. Patients should brush three times per day with a soft brush and a toothpaste containing 5,000 ppm fluoride. They should clean the interproximal embrasures daily and clean their tongue too, to remove biofilm and acid residue.

A mouth guard can be used to protect the dentition during vomiting. Brushing directly after vomiting causes more loss of tooth structure, and rinsing with water reduces the protective properties of the saliva. Instead, the oral pH should be neutralised by rinsing with one teaspoon of sodium bicarbonate in 250 ml water, or with a product containing calcium and phosphate ions. For additional support, we can share information on resources for those who struggle with eating disorders. With increased knowledge and vigilance, dental care professionals can enhance detection of warning signs of eating disorders, for improved patient care and favourable outcomes.

Table 3: The SCOFF questionnaire utilises an acronym in a simple five-question test devised for use by non-professionals to assess the possible presence of an eating disorder.**

When an eating disorder is suspected, this sensitive topic needs to be approached in a non-judgemental, non-threatening manner. It is beyond our scope of practice to diagnose eating disorders, but we can present the findings of our examination to the patient.** For example, if there is dental erosion, we could mention some possible causes, like acidic drinks, acid reflux or frequent vomiting. This gives the patient an opportunity for disclosure. If he or she discloses his or her eating disorder to us, he or she should be referred to his or her physician. If he or she is not ready to tell us, we can still be supportive and initiate a prevention protocol based on our clinical findings.

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The 36th Australian Dental Congress

Brisbane Convention and Exhibition Centre - an AEG 1EARTH venue

Wednesday 25th to Sunday 29th March 2015

Invitation from the Congress Chairman

On behalf of the Local Organising Committee of the 36th Australian Dental Congress, it is with great pleasure that I invite you to attend Congress and enjoy the river city of Brisbane.

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Dr David H Thomson
Congress Chairman
36th Australian Dental Congress

36th Australian Dental Congress

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Editorial note: A complete list of references is available from the publisher.
Make good use of what you have
Fabrication of ultrathin veneers for invisible, non-invasive restorative dental treatment

Dr Necib Sen & CDT Hilal Kuday
Turkey

A systematic approach is essential when the aim is to achieve the best possible aesthetic results in tight situations. Apart from the tooth morphology, the parameters of brightness, opacity and translucency have to be taken into account.

A radiant smile suggests a positive attitude and plays an important role in human interaction. When a person’s smile is changed, this influences the way in which the person is perceived by others. In order to change a patient’s smile in a way that will be attractive and effective, a wax-up and/or mock-up should be used to determine the treatment goal at the outset. This approach also allows as much tooth structure as possible to be preserved. Once a favourable basis has been established, the permanent restoration can be created, without any significant preparation in some cases.

A wax-up is an indispensable aid in diagnosing and analysing the individual restorative needs of the patient, since it reflects the actual conditions. Furthermore, the cementation protocol must be established at the beginning of the treatment, so that the wax-up can be used to anticipate and avoid any possible problems.

In the following case, a young actress wished to have the composite restorations on teeth #11 and 21 replaced with a long-lasting aesthetic solution. In addition, the patient was dissatisfied with the dark appearance of her central incisors (Figs. 1 & 2).

The aim of the treatment was to apply non-invasive principles and use only very little restorative material to achieve an outstanding result.

First, the teeth were internally whitened. Next, the old composite restorations were carefully removed with the help of finishing discs. The tooth surfaces remained virtually untouched in the process (Fig. 3). A special modelling wax was used to create the wax-up, since the space requirements were very restricted. Owing to conventional waxes demonstrating very low opacity, we decided to use the highly opaque material CeramX (IPS), which is also used for sculpturing purposes. This material exactly suited our needs (Figs. 4 & 5). The shape, morphology and microtexture of the final restoration were crafted in wax and then submitted to the attending dentist.

The wax try-in was checked in the dental office and a few minor modifications were made. We decided to give the patient a full smile design treatment that would involve teeth #15–25. For this purpose, the crowns were surgically lengthened according to a state-of-the-art protocol. After the healing phase, an impression was taken without the soft tissue having to be retracted (Fig. 6).

In the next step, the wax-up veneers were converted into ceramic using a hot-pressing process (IPS e.max Press, Ivoclar Vivadent). For this purpose, the restoration margins were carefully marked with a red pen on the study model (Fig. 7). The markings were made 0.3 mm from the gingival margin.

For the fabrication of the veneers, the space requirements were very restricted. Owing to conventional waxes demonstrating very low opacity, we decided to use the highly opaque material CeramX (IPS), which is also used for sculpturing purposes. This material exactly suited our needs (Figs. 4 & 5). The shape, morphology and microtexture of the final restoration were crafted in wax and then submitted to the attending dentist.

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The material would have to be able to simulate the translucent properties of natural tooth structure. The IPS e.max Press Value ingots exhibited the luminosity required in this case, and they would allow the desired translucent properties to be achieved in the incisal areas (Figs. 8–10). As mentioned, the waxed-up restorations were reproduced in ceramic (Value 2 ingot) using the familiar press technique. The pressed veneers were approximately 0.3 mm thick. Consequently, they were somewhat bulky in the marginal area in particular. As a result, these areas would have to be adjusted with silicon carbide burs after the restorations were placed.

The plan was to characterise the veneers with a layering ceramic. Therefore, they had to be cut back slightly. The ultrathin veneers were ground with utmost precision, since subsequent remeasuring is not recommended and can lead to flawed results. We cut back the restorations according to the markings we had made (Fig. 11). These horizontal and vertical lines had been drawn on the contact surfaces of the restorations. Owing to the high translucency of the ceramic, these lines were visible on the labial surfaces and served as a guide for the removal of the restorative material (Figs. 12 & 13). The finished cut-back areas showed that very little space was available for the characterisations (Figs. 14 & 15). Only the incisal and central areas were individualised as a result (Figs. 16 & 17). The veneers were finished and then sent to the dental practice for placement. Since the restorations were ultrathin, final polishing would be done in the patient’s mouth.

The restorations were permanently seated using products in the Variolink Veneer Cementation Kit (Ivoclar Vivadent), which were used according to the instructions of the manufacturer. The restorations were seated and the transitions to the dental hard tissue were carefully finished with silicon carbide burs to attain the desired surface gloss (Fig. 18). The veneers looked very natural in the mouth. The ceramic restorations were indiscernible from the tooth structure (Figs. 19–21).

**Conclusion**

Non-invasive veneers offer many advantages, including maximum preservation of the tooth structure. In this case, we were able to satisfy yet another patient with an aesthetic restoration without having to remove any healthy tooth structure.
The significance of radiographs in endodontic therapy

Table 1: Factors and rationales when using a 2-D radiograph for diagnostic purposes

<table>
<thead>
<tr>
<th>Factors</th>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location of the lesion</td>
<td>• Affects the position and size of the object</td>
</tr>
<tr>
<td>Position of the tooth in the jaw</td>
<td>• Affects the diagnostic quality of the radiograph</td>
</tr>
<tr>
<td>Processing procedure</td>
<td>• Affects the diagnostic quality of the radiograph</td>
</tr>
<tr>
<td>Viewing conditions</td>
<td>• Important for identifying normal anatomical structures and presence of pathology</td>
</tr>
<tr>
<td>Clinical experience of the observer</td>
<td>• An observer with more experience analysing radiographs may be able to detect the presence of pathology better.</td>
</tr>
<tr>
<td>Superimposition of anatomic structures</td>
<td>• Affects the diagnostic quality of the radiograph</td>
</tr>
<tr>
<td>Position of the tooth in the jaw</td>
<td>• Superimposition of anatomical structures, density of surrounding bone, single- vs. multiple-rooted teeth</td>
</tr>
<tr>
<td>Location of the lesion</td>
<td>• May be superimposed with anatomical structures, such as the mental foramen, maxillary sinus or nasal sinus</td>
</tr>
</tbody>
</table>

Table 2: Types of radiographs and their advantages and disadvantages

<table>
<thead>
<tr>
<th>Types</th>
<th>Advantages</th>
<th>Disadvantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introral</td>
<td>• Conventional periapical • Expensive • Requires extended exposure time • Requires larger office space for the machine • May be difficult to interpret the image • Requires larger x-ray film</td>
<td>• Requires high patient tolerance • Reduced chairside time owing to the mobile unit</td>
</tr>
<tr>
<td>Digital periapical</td>
<td>• CBCT • Cone beam computerized tomography (CBCT) • 3-D image • Image enhancement • Image can be modified • Immediate image display • Available in most dental clinics • Reduced chairside time owing to the mobile unit</td>
<td>• Image may not be clear enough in certain areas, particularly in the anterior</td>
</tr>
<tr>
<td>Extraoral</td>
<td>• Detailed visualization of entire root canal anatomy and its periapical area • Complete view of the entire root canal anatomy and its periapical area • Available in most dental clinics</td>
<td>• Requires operator skills • Requires patient cooperation • Requires larger office space for the machine</td>
</tr>
<tr>
<td>CBCT</td>
<td>• 3-D image • Image enhancement • Image can be modified • Thorough assessment of teeth • High radiation dose • Requires high patient tolerance • Requires large office space for the machine</td>
<td>• Requires more patient cooperation • Requires high patient tolerance • Requires large office space for the machine</td>
</tr>
</tbody>
</table>

The success of any endodontic therapy depends on adequate chemical and mechanical debrideement of the infected root canal. This requires basic knowledge of the canal anatomy and the ability to identify any aberration in it. Studies have shown that micro-organisms in the root canal system reside in the main canal, the canal’s ramification, the accessory or lateral root canal, and even the dentinal tubules. Therefore, optimal debridement can only be achieved if the clinician is able to identify the presence of additional canals prior to or during treatment (Table 1).

Currently, the only method available to assess the root, the root canal anatomy and its periapical area preoperatively is through dental radiographs. Whether radiographs are performed intra-orally (periapical) or extra-orally (dental panoramic tomogram or cone beam computed tomography, CBCT), fractures, resorptive defects or procedural errors can also be identified this way. Thorough examination of radiographs is important, as it can provide an indication of the complexity of the treatment, including anticipated difficulties (Table 2).

The use of CBCT has been widely explored and its advantages are well documented. While its benefits for diagnosis in endodontic treatment cannot be
Intra-oral radiographs, such as conventional and digital periapical radiographs, are still routinely used as one of the important investigative tools during endodontic examination and the diagnosis stage. Even though it has a few limitations, an appropriately taken and processed periapical radiograph can still provide enough information and evidence to aid in diagnosis. An acceptable periapical radiograph must have adequate contrast and no or minimal processing error and include at least 3 mm of the surrounding periapical area to allow accurate assessment of the tooth of interest and its surrounding area. Additional periapical radiographs at different angulations (10–50 degrees horizontally or vertically) could be taken to determine the location of a periapical lesion or any resorptive defect present on the root and its surface (internal or external).4–6 An earlier study has shown that accuracy in detecting the presence of twin canals increased using a periapical radiograph with a horizontal shift.4 Another conclusion that the detection of periapical lesions was more accurate with an angulated radiograph.6 However, the degree of angulation should not be excessive as it would result in overlapping of the image or changes in the image size, thus reducing the diagnostic quality of such a radiograph.2

Periapical radiographs taken at different angulations may be necessary in order to determine the number of root and root canals of a tooth, especially in premolars and molars. Several studies have shown that radiographs taken at a horizontal angle of 50 degrees improve the ability to determine the canal type in premolar teeth.8–10 Periapical radiographs can be taken either by using the parallelizing or bisecting angle technique.

Dental radiographs must have minimal distortion and magnification, as any elongation or foreshortening would result in incorrect measurement of the root canal length. Careful assessment of the root is essential to identify any root aberration that may be present (Fig. 1). It is quite common to find a Chinese patient with a C-shaped canal or other Mongoloid trait with an aberrant root or root canal anatomy.9–11 Thus, thorough assessment of the radiograph is necessary to ascertain the presence of additional roots or root canals and thereby establish treatment difficulty.

Since endodontic therapy involves the treatment of the root canal, which is not visible to the naked eye, radiographs aid in determining whether treatment was carried out satisfactorily and adequately.

Proper assessment

Dental radiographs are important in endodontic therapy to determine tooth morphology, ascertain the cause of the dental problem and provide an early assessment of the tooth of interest. Based on a radiograph, the re-storability of a tooth and the complexity of the treatment can be assessed.

It also helps clinicians decide whether he or she has the skills to perform the treatment or should refer the patient to a specialist. The presence of a pulp stone in the pulp chamber or another obstruction within the tooth or root canal (e.g. a post, a pin, a separated instrument or root filling material) can be determined prior to treatment (Fig. 2).

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**Table 1: Factors to consider during radiograph assessment**

<table>
<thead>
<tr>
<th>Area</th>
<th>Factors assessed</th>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crown</td>
<td>• Shape of the pulp horn</td>
<td>Assessment of the crown’s shape and possible irritants</td>
</tr>
<tr>
<td></td>
<td>• Distance from occlusal surface</td>
<td></td>
</tr>
<tr>
<td>Pulp chamber</td>
<td>• Number of roots</td>
<td>Determination of the number of roots and root canals</td>
</tr>
<tr>
<td></td>
<td>• Size of roots</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Curvature (degree, direction)</td>
<td></td>
</tr>
<tr>
<td>Root canal</td>
<td>• Number of root canals</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Size of roots</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Presence of accessory roots</td>
<td></td>
</tr>
</tbody>
</table>

The clinician must pay extra attention when treating a chipped or obliterated canal. Use of magnification, such as dental loupes or a microscope, is recommended in these situations.
Trends & Applications

Important, as it will give the clinician some indication of the prognosis and any difficulties that might occur during treatment. All of these factors must be discussed with the patient prior to treatment, so that he or she can decide whether to proceed with the endodontic therapy.

While the use of a periapical radiograph alone may be sufficient in most cases, supplemental radiographs may be needed if the clinician finds that the tooth may have additional roots or to ascertain the root curvature. Taking another periapical radiograph at a different horizontal angulation (10–30 degrees) may therefore be necessary. Again, care must be taken to minimise the extent of superimposition on adjacent teeth. The SLOB rule (same lingual, opposite buccal) can be used to determine the location of an additional root or root canal.

The size of the root canal can also be assessed from the radiograph. This information will provide some indication of the complexity of the treatment and the choice of the obturation material and technique. A tooth with an open apex may require placement of a calcific barrier, such as mineral trioxide aggregate, apically prior to obturation.

The status and quality of the existing coronal restoration must be assessed radiographically and clinically. All defective restorations must be removed and replaced with either permanent or temporary restorations. Any carious lesion must be noted, and the depth of the lesion must be determined clinically. This is important in order to ensure that the tooth is deemed restorable prior to treatment. The clinician must decide on how to restore the tooth after completion of endodontic therapy prior to initiation of treatment.

Posts, separated instruments or root filling material within the root canal may complicate the endodontic treatment (Fig. 3). The size and type of post will determine the feasibility of removing such a post. A separated instrument in the apical third of the root and below the curved root may be more difficult to remove than a more coronally located fragment.

Operative assessment (treatment phase)

Working length is confirmed and quality of obturation is assessed during treatment to ensure the treatment is carried out satisfactorily. A periapical radiograph may also be taken to ascertain the correct angulation of the bur or endodontic file when negotiating a blocked or calcified canal, during post space preparation and even during access preparation through a calcified pulp chamber (Fig. 4). This is essential for preventing procedural errors, such as perforation of the pulpal floor or canal wall.

During obturation, it is important that the root canal be obturated to the predetermined working length and have no voids. This can be confirmed by taking a periapical radiograph during treatment. Obturation that is shorter or longer than the working length may affect the treatment outcome.

Post-operative assessment

After therapy has been completed, a periapical radiograph should be taken to ensure that the treatment was carried out adequately. This will function as a baseline when reviewing the patient six to 12 months later. From this immediate post-operative radiograph, the quality of the final coronal restoration can be ascertained and the size of the periapical lesion, if present, can be assessed. At the recall appointment, a new periapical radiograph of the endodontically treated tooth is taken to monitor the healing of the periapical lesion and to confirm the success of treatment. The presence of a new periapical lesion or the enlargement of an existing one should be noted, and necessary measures should be taken to identify the cause of treatment failure.

Conclusion

Using intra-oral radiographs is the only method in endodontic therapy that allows the clinician to make an assessment of the root and its supporting tissue. In order to gain the full benefit of this radiograph, clinicians have to ensure that it is appropriately exposed, shows no processing errors and has no or minimal image distortion. It also has to be correctly mounted, labelled and dated. Clinicians must be able to select which radiograph is necessary to aid in their endodontic diagnosis based on the patient’s history and clinical examination.
**“Our aim is to be a leading provider of evidence-based endodontic CE”**

An interview with APEC President Dr Ibrahim Abu Tahun, Jordan

Dental Tribune Asia Pacific: Political tensions in the region remain high, particularly after the Charlie Hebdo massacre in Paris earlier this year. How is the current security situation in the country and especially in the capital?

Dr Ibrahim Abu Tahun: The travel warnings released by Western foreign offices did not include Jordan or any part of it at any stage. Our country has officially condemned this crime and Their Majesties the King and Queen of Jordan led world leaders in the march against terrorism in Paris.

Decades of political stability, moderation and tolerance under His Majesty’s wise leadership have made Jordan an oasis of peace and one of the top ten countries worldwide in terms of security.

**Could you give us an accurate view of the current status of endodontics in Jordan?**

There is a general surplus of dentists, both general practitioners and specialists, entering the Jordanian market each year. The total number of registered dentists with the Jordanian Dental Association at the end of 2011 was slightly over 7,000, and 10 per cent of these were specialists. The kingdom currently prides itself on having the highest number of highly qualified dental professionals with postgraduate qualifications compared with any other country in the Middle East. Many of them have been trained in Western Europe, North America and Australia.

**Is endodontics therefore a recognised specialty in your country?**

In the past, Jordanian endodontists were members of the Jordanian Society of Conservative Dentistry and had to practise under the umbrella and regulations of the Jordanian Dental Association. 2007 saw the establishment of the Jordanian Endodontic Society. Endodontics is one of the eight dental specialties recognised by the Jordan Medical Council, which is the highest medical authority responsible for the organisation of the medical profession and specialisation in the country. Since then, endodontics has experienced significant progress in Jordan.

**How do you think the congress is going to affect endodontic treatment and diagnoses in the future?**

Such international meetings always constitute a platform for scientists and practitioners to update their knowledge and interact with the latest endodontic innovations worldwide to improve their knowledge and answer the ultimate question: where do we stand?

**In addition to the scientific programme, what can participants look forward to in Amman?**

This pioneer endodontic event in the Asia Pacific region is intended to connect colleagues from around the world to generate and update knowledge and foster friendship. A wide range of dental products, including instruments and other equipment, will be on display by our industry partners.

It is a great pleasure and honour to welcome participants to the country where some of the earliest chapters of human civilisation were written. Travelling to Jordan, with its rich heritage of biblical and historical sites, will provide visitors with a unique opportunity to enjoy the warmth and hospitality of our country and its people.

**Thank you very much for the interview.**
Endodontic imaging mode available from Planmeca

Planmeca has introduced a new imaging mode that was developed especially for use in endodontics and in cases dealing with small anatomical details, such as imaging of the ear. The new mode, which produces extremely high-resolution images with a very small voxel size of only 75 μm, is available for all Planmeca ProMax 3D imaging units.

According to Planmeca, the new mode provides clinicians with perfect visualisation of even the smallest anatomical details. Owing to new intelligent noise and artefact removal algorithms, noise-free and crystal-clear images can be produced, the Finnish dental equipment manufacturer said. With Planmeca ARA, for example, artefacts resulting from metal restorations and root fillings in the patient’s mouth that cause shadows and streaks in CBCT images can be removed effectively. In addition, the new Planmeca AINO Adaptive Image Noise Optimiser is intended to reduce noise in CBCT images resulting from a particularly low radiation dose or small voxel size without losing valuable details. The company said that the filter particularly improves image quality in the endodontic mode, where noise is inherent due to the extremely small voxel size. It has also proven useful when used in accordance with the Planmeca Ultra Low Dose protocol, where noise is induced by the particularly low dose.

Planmeca AINO also allows the reduction of exposure values and consequently the radiation dose in all other imaging modes, according to Planmeca.

Irrigatys

With endodontic treatment, there is the risk of superinfection. The French laboratory ITENA Clinical claims to have solved this problem with its revolutionary Irrigatys handpiece. This two-in-one device is used for both irrigation and agitation of the cleaning solution inside the root canal. To achieve this, the laboratory put a perforated metal tip at the top of the handpiece to deliver the cleaning solution in an oscillating movement. A removable tank allows the root canal to be treated successively using sodium hypochlorite and EDTA. The irrigation line directs the cleaning solution through the metal tip.

The patented technology, achieved after six years of research, optimises the results of a very complex procedure, according to the company. Ambidextrous, light and flexible, the device has excellent ergonomics, providing intuitive handling. Irrigatys recharges on a charging station that can be fixed to the chair.

Irrigatys is available with all of its accessories in a starter kit. The metal tips are available in two sizes, 17 mm and 21 mm, to cover all clinical cases.

Changing the DNA of NiTi

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controlled memory niti files

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- No shape memory + Extreme flexibility = Superior Canal Tracking
- Regains shape after sterilization = Multi-use

The patented technology, achieved after six years of research, optimises the results of a very complex procedure, according to the company. Ambidextrous, light and flexible, the device has excellent ergonomics, providing intuitive handling. Irrigatys recharges on a charging station that can be fixed to the chair.

Irrigatys is available with all of its accessories in a starter kit. The metal tips are available in two sizes, 17 mm and 21 mm, to cover all clinical cases.
Endodontic treatment in the future will be simpler and standardised

An exclusive interview with Drs Laurent Bataillard and Didier Lakomsky, MICRO-MEGA

"Our aim is to continue our strong development in Asia while consolidating our position in Europe and the US."

Since 1905, MICRO-MEGA has been at the heart of great technological revolutions in the field of dentistry. Today, the French pioneering company is still delivering turnkey endodontic solutions to practitioners around the world. At the start of a series of innovations, Dental Tribune International recently travelled to Besançon in France to meet Managing Director Dr Laurent Bataillard and Endodontics Business Unit Director Dr Didier Lakomsky to discuss how their company intends to reassert its global reputation of French expertise, which it established in 1997 when it introduced its first nerve broach.

**Dental Tribune: Dr Laurent Bataillard, you have been the Managing Director of MICRO-MEGA for almost a year now. What is your background?**

**Dr Laurent Bataillard:** I am a physics engineer with a specialisation in metallurgy. The subject of my doctoral dissertation was in fact phase transformation in nickel-titanium wires for use in endodontics. After my doctorate, I worked in the metalworking industry for several years and held various positions in research and development, production, operations and management until Sanavis recruited me. That is how I came to join MICRO-MEGA—kind of a return to the roots.

**Dental Tribune: Dr Didier Lakomsky—what were the benefits of the company's takeover by the Sanavis Group in 2009?**

**The Sanavis Group is one of the ten most important dental equipment suppliers in the world. The grouping of the company's entities, MICRO-MEGA, SeifCan and SycoTec is now able to offer practitioners worldwide a comprehensive range of innovative solutions: endodontic files, micro-motors, and complete retreatment and hygiene systems, to the country of origin of the products they buy. What does "made in France" mean to you?**

It reflects the intent, among others, to maintain our industry in France and in Besançon and to avoid outsourcing of jobs abroad. MICRO-MEGA has been designing, manufacturing and marketing dental surgical instruments in the heart of the French watchmaking and microtechnology capital for over a century now.

Furthermore, all production stages, from the product design to the delivery of the final product, take place under one roof. This results in great flexibility and quick response, an important synergy between the various entities, perfect control of the entire production process, as well as optimised traceability and follow-up.

Despite our international orientation, we need to remember where we come from. We have strengthened our presence in Besançon and in France through partnerships with university hospitals and local practitioners, and we are even considering patro-nage of a local modern concert hall.

**How do you intend to implement your international development strategy?**

By responding to everyone's needs closely. The Garniers, the company's founding family, have always collaborated with the great names in the history of dentistry. These successful partnerships have brought about revolutionary products, like the nerve broach, the Giromatic (first contra-angle with reciprocating movement), the HERO 642 sequence (first MICRO-MEGA NiTi sequence, developed by Profs. P. Calas and L.-M. Vulcain), Revo-S (NiTi sequence with three instruments, designed by Drs J.-P. Mallet and F. Diemer) and One Shape (first single instrument in continuous rotation, developed by Profs. F. Pérez and M. Guigand).

We are currently strengthening our presence all over the world through conferences and training for dentists. Our aim is to continue our strong development in Asia while consolidating our position in Europe and the US. We work with the opinion leaders of the main European markets and conduct precisely targeted studies in order to offer complete and specific endodontic solutions corresponding to practitioners' habits. Our strength lies in our products' quality, simplicity, security and efficiency: these are the key words that define our day-to-day work.

**Is ecology a matter of concern for you?**

Naturally, we try to recycle as much as possible and to avoid waste. We also seek ongoing improvement of our manufacturing processes.

**Dr Lakomsky: what is your role in the company?**

"Our aim is to continue our strong development in Asia while consolidating our position in Europe and the US."
Dr Didier Lakomsky: MICRO-MEGA’s reputation is based on technical expertise combined with comprehensive networking with dental professionals. My role is to define and implement high-performing products in close co-operation with endodontic specialists, general practitioners and distribution partners worldwide. Ensuring benefit from these exchanges with practitioners, anticipating future market needs and transforming them into relevant technical solutions are also part of my function at MICRO-MEGA. A structural consequence of my work is the grouping of the marketing and the research and development departments concerning product planning in the short, medium and long term. In this regard, I encourage and support synergies.

What do you think endodontic treatment will look like in the future?

Above all, it will be simpler and more standardised. Continuous rotation and reciprocating motion are currently enjoying irrefutable success. This evolution—one could even call it a revolution—has enabled general practitioners to increase the number of endodontic treatments performed in their practice. Increasing endodontic treatment is a trend that is likely to continue in the coming years.

In the future, endodontic treatment will be quicker, but will still respect bacterial prevention standards. Sodium hypochlorite may be replaced by a new irrigation solution that offers the same efficiency while reducing the irrigation time.

We can expect solutions that are more sophisticated and that have scientifically proven effectiveness. The technological evolutions will extend gradually over the next three to five years. Practitioners will work with increasingly flexible and resistant materials, allowing the treatment of even complex root canals, and with imaging techniques like CBCT, offering an extremely precise 3-D visualisation of the root canal structure and enabling practitioners to choose the appropriate treatment method according to the anatomical and clinical complexity. This is often referred to as stratification. In the longer term, the introduction of pulp regeneration techniques according to the clinical case is expected, with diagnostic methods allowing the evaluation of the reversibility of a case of pulpitis.

What are MICRO-MEGA’s objectives today?

Our goals are to provide general practitioners with solutions that make endodontic treatment reproducible and as simple as possible, to enable them to increase their number of cases and to improve their success rate significantly. The last is a fundamental condition for our company’s success.

Thank you very much for the interview.

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