New report says parents to blame for children’s poor oral health

By DTI

MANCHESTER, UK: A lack of knowledge about the importance of early oral health care measures and the availability of treatment among parents has led to almost every seventh child aged 8 or under in the UK having never seen a dentist, according to a new report by dental group mydentist in Manchester. The survey also found that one in ten of those children who had actually seen a dentist had at least one filling done, resulting in an estimated burden of £22 million annually for the National Health Service.

The report is in line with new findings by the Faculty of Dental Surgery at the Royal College of Surgeons of England earlier this week that oral health among the nation’s youth is worsening, with more children than ever sent to hospitals for tooth extractions owing to severe decay. While the Royal College of Surgeons has identified increasing sugar consumption as the main contributor, the mydentist report blames parents who are unaware of or fail to implement appropriate oral health care measures at home for the dental problems.

Among its findings are that only a quarter of the children of the parents surveyed brushed their teeth for the recommended two minutes twice daily. Many parents also failed to identify things that are actually beneficial to their children’s health, such as fluoride, which is 1 per cent considered to be harmful.

On the contrary, almost a fifth of the parents thought that acidic beverages like fruit smoothies, a major contributor to tooth erosion, would benefit their children’s teeth.

The mydentist survey was conducted among 2,000 parents throughout the UK. It found that those in Wales were most likely to take their children to see a dentist early on. Children living in the North West also scored higher in terms of personal oral hygiene, brushing their teeth for longer than youngsters in any other region.

Maltreatment case settled with five figure number

By DTI

CHELMSFORD, UK: A dentist from Benfleet in Essex is reported to have paid an amount of £16,000 to settle a lawsuit by a former patient over allegations of maltreatment. Charges against him included having damaged the facial nerves of the 49-year-old civil servant, Graham Hancock, during a third molar extraction at his dental practice in Chelmsford.

Hancock told the Essex Chronicle that he had suffered from continuous facial pain, numbness and loss of taste after having undergone the procedure in late 2013. After his condition worsened, he was sent to King’s College Hospital in London for specialist treatment.

The case was taken to court after other oral surgeons found the dentist’s work to have been unprofessional. Among other things, he failed to take a radiograph to identify the risks of the procedure and to inform the patient of other treatment options. Hancock’s solicitors said currently working at a dental practice in Basildon, the dentist is reported to have not admitted liability despite having agreed to pay the five-figure settlement.

He has also been under surveillance by the General Dental Council on several charges of misconduct and poor professional performance, including allegations of not having maintained appropriate standards of infection control and having exposed patients to dental panoramic radiography without justification while working at his former practice in Southend-on-Sea between September 2010 and October 2012.

Halitosis association launched

In order to address the lack of scientific data on halitosis, the International Association for Halitosis Research (IAHR) was officially formed on 5 June in a meeting of leading halitosis researchers during EuroPerio8 in London. As new insights into the problem of bad breath are rapidly expanding, the IAHR aims to promote research on all aspects of halitosis and its related issues and to distribute and publicise the research. “Not only do we need to create awareness among the public, but we should also enhance the information and treatment advice for professionals,” president Dr Edwin Winkel from the Netherlands said.

Despite affecting a vast number of people worldwide, sound epidemiologic data on halitosis is rare. While in 10 cases of halitosis are attributable to tongue coating, gingivitis, periodontitis and other conditions in the oral cavity, a minority of cases are caused by systemic diseases or conditions.

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Leeds collaborates over future of oral health care in Europe

By DTI

LONDON, UK: Dental treatments cost an estimated £79 billion a year across the EU, with dental diseases now almost entirely preventable. A new research project, funded through a €6 million grant from the EU, aims to bring about a shift in dental care practices, from a focus on treating teeth by extraction and fillings to more effective oral health care treatments to prevent disease in the first place.

The four-year project will be led by the University of Leeds, in conjunction with the Academic Centre for Dentistry Amsterdam and Heidelberg University, in collaboration with NHS England, as well as universities and dental insurers from across Europe.

Using de-identified data from millions of health records across Europe, the researchers will work with dental professionals and insurers to identify effective strategies for preventing disease in each country. Providing continuous feedback to shape best practice, a set of key performance indicators will be developed against which dentists and health care systems can measure themselves.

“The World Health Organization has said that dental diseases are the most common chronic diseases known to man. We want to change this,” said Prof Helen Whelton, Dean of the University of Leeds’s School of Dentistry and project lead. “The hope is that, by continually assessing and feeding back the performance of dental professionals and healthcare systems in keeping teeth healthy, it will foster change in practice and encourage a move to more preventive dental care.”

“We will be using secure, de-identified medical records to develop a model with a focus on preventing dental problems, which gives dentists and health systems the ability to measure their success in making patients healthier,” Whelton explained. “We will be looking at things such as how long teeth remain healthy with no need for treatment or, at country level, the amount spent on extractions each year. This information can be compared across different systems and countries.”

The project will have access to eight European patient record databases from countries including Britain, Denmark, Germany, Hungary, Ireland and the Netherlands. In addition to relating the views of professionals and insurers, the project will consult with patients in the participating countries to identify their preferences and gain their perspectives on the dental care they receive.

“This is a fantastic example of collaboration between universities, the public sector and the private sector, with the aim of improving the dental health of an entire continent, and we hope this will feed into the reform of healthcare systems globally,” Whelton concluded.

Most Brits avoid showing their teeth in photographs

By DTI

LONDON, UK: Say “cheese”? Although it is meant to make people smile, this cue apparently induces the opposite in many British people. According to a new survey, eight out of ten worry about how their teeth look in photographs, with almost every second person wishing they were whiter and 35 per cent admitting to being embarrassed about the appearance of their teeth in photographs.

Fourty-two per cent of those polled confessed that their teeth were the number one thing they would change about themselves, 35 per cent admitted to being uncomfortable with the appearance of their teeth in photographs, with 28 per cent of them refusing to smile in pictures at all for fear of their teeth looking unattractive in photographs or on social media.

Shying away from smiling in photographs is one thing, but the British’s anxiety about their teeth appears to be linked to a serious lack of oral hygiene knowledge. Of those surveyed, 47 per cent admitted that they do not know how to brush their teeth properly. The poll further found that half of the respondents do not use mouthwash, 9 per cent share a toothbrush with someone else and, alarmingly, 29 per cent do not even use toothpaste. One in five also admitted that they regularly use chewing gum as a substitute for brushing their teeth.

Commenting on the research, Dr Steven Preddy, Dental Clinical Director of Rupa Dental Services, said: “Worryingly, our research highlights how many people are ignoring the art of brushing their teeth properly. Modern, state-of-the-art electronic toothbrushes and interdental tools provide a wealth of different ways to clean. So there should be no excuse for not brushing for two minutes twice every day, and in conjunction with seeing a dentist regularly, we encourage people not to neglect their teeth and gums!”

In terms of UK regions, respondents from South East England were the most responsible teeth cleaners with 74 per cent brush twice daily as recommended, followed by Scotland (67 per cent) and Northern Ireland (64 per cent).

The worst offending region was Yorkshire and the Humber region, where only 53 per cent of respondents brush twice a day.

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Dental Circle meets in London to celebrate future of professional social media

By DTI

LONDON, UK: With temperatures skyrocketing last month in the capital, the organisers of Dental Circle could not have chosen a better time to hold its first major networking event. Consequently, hundreds of members of the professional social media website met in London to share ideas and celebrate the achievements of the ambitious platform.

And there was plenty to celebrate at the event sponsored by dental implant solutions provider Straumann. In just one year after launching, the site has attracted over 3,000 members, a number that might not seem high for a professional network, but one that fits in perfectly with the ethos founders Amit and Dev Patel had in mind when launching the site. Instead of being open to anyone, like Facebook or Twitter, the network works similar to exclusive social media websites like LinkedIn, but without the hurdle of having to pay one’s way into it. Professionals interested in joining Dental Circle just have to be registered with the General Dental Council and want to be part of an ever-growing network of professionals.

“In the current employment market, young dentists are struggling to find jobs and make the right connections. Specialists too are receiving fewer referrals and principal dentists are flooded with ambiguous CVs from across the world,” explains Amit Patel, who is also a London-based dentist. “Dental Circle is the professional network for dental professionals, with the aim of connecting all dentists, therapists, hygienists, nurses and laboratory technicians.”

Once approved, members are given a personal profile page, which they can customise with their interests and achievements, and as well as the opportunity to upload images of their own cases and share them with the rest of the community. From these, the best are awarded on a regular basis. Furthermore, members can join special interest groups to explore or deepen their knowledge of different aspects of dentistry. These are led by mentors, including clinical gurus such as Chris Orr and Zaki Kanaan.

“Young dentists are more ambitious than ever, looking to advance their careers through courses and investing in dental products and practices early on. Our goal was to create a website where they can find support from a variety of professional sources,” Patel said.

In addition to its online presence, which includes common social media websites like Facebook, Dental Circle has recently begun organising roadshow events that give members and other professionals the opportunity to network with prominent experts, as well as to try out the latest technologies and tools. Three of these events, intended to cover clinical topics ranging from short-term orthodontics to posterior direct restorations, are scheduled for later this year in London, Leeds and Manchester.

“The Dental Circle Roadshow events are a new concept, aimed at young dentists, helping to build foundations, but also advance current techniques,” said Dev Patel.

Registrations for each of the one-day events, which are worth seven hours of continuing professional development, are still being accepted. Professional interested in attending the work shops and demonstrations can purchase one-day or seven-hour passes. Online registration for the event is open until 17 September online but delegates can also register on site at the registration desk on 27 September.

Capital prepares for International Orthodontic Congress

By DTI

LONDON, UK: The International Orthodontic Congress (IOC) is held once every five years and offers up to 10,000 orthodontists and allied professionals a unique platform to meet, network and exchange knowledge and ideas with their colleagues and peers from across the globe. The World Federation of Orthodontists (WFO) and the British Orthodontic society, the two largest dental specialist groups in the UK with over 1,800 members collectively, will be hosting the eighth edition of the congress in London, from 27 to 30 September.

The organiser expect to attract more than 7,500 people. About 4,000 participants have already signed up for the event. It will be officially opened on 27 September at the ExCeL London Exhibition and Concourse Centre in the heart of London’s Royal Docks, with easy access to central London. The venue is part of a 150-acre site which includes three on-site above-ground rail stations and easy access to the underground network and London City Airport.

In order to cater for both orthodontists and other dental health professionals, such as dental technicians, hygienists, dental attendants and office staff, the WFO will be offering two scientific programmes that will run in parallel. In addition to these programmes, a World Village Day will take place, which will comprise of seven parallel, full-day programmes. To date, distinguished speakers have already confirmed their participation.

The congress lectures and presentations will be held in English, however, simultaneous translation will be provided for some sessions.

Alongside the scientific programme, attendees will have the opportunity to learn more about new products and technological developments at the adjoining exhibition that will run for the duration of the congress.

In addition, during the course of the congress, several social events are planned for the evenings, including an international reception at the famous Madame Tussauds wax museum and a gala dinner at the Old Billingsgate, an extraordinary and unique venue that is situated in a prime position on the River Thames which was once the world’s largest fish market. Tickets for these events can be purchased upon registration.

According to the WFO, one of the reasons the congress is taking place in London is because of the city’s heritage and its attractions on offer. As a city of history and culture, delegates will have numerous opportunities to enjoy many of the sights, including castles and palaces, historical buildings and monuments, theatres and opera houses and other well-known places that were described by famous authors, such as William Shakespeare and Charles Dickens.

Online registration for the event is open until 17 September online but delegates can also register on-site at the registration desk on 27 September.
LONDON’S TOP 10 ATTRACTIONS

1. BRITISH MUSEUM
The world-famous British Museum exhibits the works of man from prehistoric to modern times, from around the world. Highlights include the Rosetta Stone, the Parthenon sculptures and the mummies in the Ancient Egypt collection. Entry is free but special exhibitions require tickets.

2. NATIONAL GALLERY
The crowning glory of Trafalgar Square, London’s National Gallery is a vast space filled with Western European paintings from the 13th to the 19th centuries. In this iconic art gallery you can find works by masters such as Van Gogh, da Vinci, Botticelli, Constable, Renoir, Titian and Stubbs. Entry is free but special exhibitions require tickets.

3. NATURAL HISTORY MUSEUM
As well as the permanent (and permanently fascinating!) dinosaur exhibition, the Natural History Museum boasts a collection of the biggest, tallest and rarest animals in the world. See a life-sized blue whale, a 40-million-year-old spider, and the beautiful Central Hall. Entry is free but special exhibitions require tickets.

4. TATE MODERN
Sitting grandly on the banks of the Thames is Tate Modern, Britain’s national museum of modern and contemporary art. Its unique shape is due to it previously being a power station. The gallery’s restaurants offer fabulous views across the city. Entry is free but special exhibitions require tickets.

5. THE LONDON EYE
The London Eye is a major feature of London’s skyline. It boasts some of London’s best views from its 32 capsules, each weighing 10 tonnes and holding up to 25 people. Climb aboard for a breathtaking experience, with an unforgettable perspective of more than 55 of London’s most famous landmarks – all in just 30 minutes!

6. SCIENCE MUSEUM
From the future of space travel to asking that difficult question: “who am I?” the Science Museum makes your brain perform Olympic-standard mental gymnastics. See, touch and experience the major scientific advances of the last 300 years; and don’t forget the awesome Imax cinema. Entry is free but some exhibitions require tickets.

7. VICTORIA & ALBERT MUSEUM
The V&A celebrates art and design with 3,000 years’ worth of amazing artefacts from around the world. A real treasure trove of goodies, you never know what you’ll discover next: furniture, paintings, sculpture, metal work and textiles; the list goes on and on... Entry is free but special exhibitions require you to purchase tickets.

8. TOWER OF LONDON
Take a tour with one of the Yeoman Warders around the Tower of London, one of the world’s most famous buildings. Discover its 900-year history as a royal palace, prison and place of execution, arsenal, jewel house and zoo! Gaze up at the White Tower, tiptoe through a medieval king’s bedchamber and marvel at the Crown Jewels.

9. ROYAL MUSEUMS GREENWICH
Visit the National Maritime Museum - the world’s largest maritime museum, see the historic Queen’s House, stand astride the Prime Meridian at Royal Observatory Greenwich and explore the famous Cutty Sark: all part of the Royal Museums Greenwich. Some are free to enter; some charges apply.

10. MADAME TUSSAUDS
At Madame Tussauds, you’ll come face-to-face with some of the world’s most famous faces. From Shakespeare to Lady Gaga you’ll meet influential figures from showbiz, sport, politics and even royalty. Strike a pose with Usain Bolt, get close to One Direction or receive a once-in-a-lifetime audience with Her Majesty the Queen.

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Bio-Emulation movement continues to grow

and techniques to achieve high aesthetic standards and emulate nature using a histological approach.

During the sessions, particularly the workshops, attendees had the opportunity to learn more about the mechanical and optical properties of natural teeth and gain knowledge on using existing techniques and materials. A considerable number of workshops were fully booked; for instance, Dr Pascal Magne's session on dental morphology function and aesthetics was among the most requested.

Over 45 per cent of attendees who took part in a representative evaluation survey said that they would definitely recommend the event to others. They were most satisfied with the choice of speakers and topics in particular.

Many of the participants took advantage of the networking opportunities offered on the two evenings of the meeting. Each day, the workshops, attendees had the advantage of the networking opportunities offered on the two evenings of the meeting. Each day, the participants further estimated the expertise needed to place an implant. However, they were deterred from seeking dental implant treatment by the high costs, invisiveness of the procedure, risks and possible complications.

Overall, the study found that the public is exposed to information about dental implants, but never received one or had any dental consultation regarding dental implants.

The participants were divided into six focus groups and had to discuss dental implants and their individual knowledge about them. All of the group discussions were transcribed verbatim and subjected to thematic content analysis following a grounded theory approach.

The Chinese research team found that the participants acquired information on dental implants through various means, such as patient information boards, printed advertisements, social media, and personal connections.

According to the researchers, the participants expected dental implants to restore patients’ appearance, function and quality of life to absolute normality. “They regarded dental implants as a panacea for all cases of missing teeth and overestimated their functionality,” the scientists stated.

The participants further underestimated the expertise needed to carry out the clinical procedures to place an implant. However, they were deterred from seeking dental implant treatment by the high costs, invisiveness of the procedure, risks and possible complications.

Overall, the study found that the public is exposed to information of varying quality and has some unrealistic expectations regarding dental implants. Such perceptions may shape their care-seeking behaviour and decision-making processes in one way or another, the researchers said.

“The views and experiences gathered in this qualitative study could assist clinicians to better understand the public’s perspectives, facilitate constructive patient–dentist communication, and contribute to the creation of positive clinical experiences in implant dentistry,” they concluded.

The study, titled “Public perceptions of dental implants: A qualitative study,” was published online on 8 May in the Journal of Dentistry.

Study reveals unrealistic public expectations regarding implants

By DT Asia Pacific

HONG KONG: Dental implants are gaining increasing popularity in the treatment of partially dentate or edentulous patients, and both the industry and dental professionals offer detailed information about implant materials, functions and procedures.

Yet, many people are not well informed and tend to overestimate the functionality of implants, while underestimating the expertise needed for implant dentistry. These are the findings of a qualitative study conducted at the University of Hong Kong.

The researchers aimed to evaluate the public’s acquisition of information and their perceptions regarding dental implants, as well as the effects of these perceptions on their care-seeking and decision-making behaviour.

The study examined a sample of 28 adults between 35 and 64 years old who had never been engaged in a dentistry-related job. Moreover, for inclusion in the study, participants had to have at least one missing tooth and to have heard about dental implants, but never received one or had any dental consultation regarding dental implants.

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“Xylitol is here to stay”

An interview with Professor Emeritus Kauko K. Mäkinen, Finland

During the early 1970’s, xylitol and other natural sweeteners were extensively tested in Finland as potential replacements for sugar. The series of over 20 research reports, published together in Acta Odontologica Scandinavica in 1979, became collectively known as the “Turku Sugar Studies.” Approaching the 40th anniversary of the publication, Dental Tribune had the opportunity to speak with Professor Emeritus Kauko K. Mäkinen, who led the original Turku research together with Arje Scheinin, about xylitol’s impact on caries levels, its popularity in Finland and the sweetener’s future prospects.

Dental Tribune: Prof. Mäkinen, you were involved in the first extensive studies of xylitol in the seventies — how far has the sweetener come since then?

Prof. Emeritus Kauko K. Mäkinen: The awareness of xylitol among consumers and health care professionals has increased significantly since the early 1970’s. However, knowledge about xylitol is not equally distributed across the world. Although awareness may approach 100 per cent in Finland, the situation is different in other countries and the level of awareness depends on the level of dental and medical education in each country.

As you mentioned, in Finland, xylitol seems to be a part of daily life.

Xylitol is indeed known by virtually all Finns and is also used by most people in Finland on a daily basis. Parents and grandparents have adopted a habit of buying xylitol gum, pastilles or lozenges for their children and grandchildren. At many day-care centres, children learn to use xylitol after lunch. Xylitol is habitual and is based on the awareness of dental and medical education in each country.

In Germany, for example, you can buy xylitol as a sweetener and it is also added in gum, but it is not widely known to the public as a mainstream product. Why do you think there is such a difference in “popularity”?

You are right about the situation in Germany. I cannot help but wonder why this could be, since xylitol was discovered by German chemists and its medical use in infusion therapy is best known by German physicians. It is possible that German dentists do not value early caries prevention as much as the dentists and the authorities do in Scandinavia. One would need a strong and committed distributor and an official endorsement from the German Dental Association.

When you did your research for the Turku studies, did you expect to find xylitol to be so beneficial, especially for oral health?

We did not anticipate the magnitude of this preventive effect. We considered it a welcome surprise. Later, of course, after learning how xylitol works and after we learned to understand the chemical mechanisms involved, we started to regard the findings as natural and expected.

The caries preventative effects of xylitol that were reported in the literature are based on clinical trials. Xylitol does, however, significantly increase the efficacy of overall caries prevention, provided that the use of xylitol is habitual and is based on the consumption of sufficiently-large daily amounts that are taken at least three to five times a day.

Do you have any data on how much xylitol is consumed in Finland or worldwide?

These figures are possessed by xylitol manufacturers and they do not provide any production-related information to us. However, the annual production worldwide must be tens of thousands of tons since xylitol is produced in China, Russia and in other countries. The first true xylitol plant in the world was in Finland and was sold to DuPont a few years ago. When production started in Finland in the 1970’s, 3,000 to 5,000 tons were made during the first few years, but overall, production is by far much larger now.

Do you think xylitol could be playing a greater role in the future, maybe in developing countries?

Xylitol is here to stay. We are already using xylitol in developing countries. Vietnam is one example and, in thinking, it is still a developing country. Xylitol is currently being used in hundreds of dental, medical, cosmetic and other products all over the world. Its popularity is increasing steadily, but not abruptly.

Thank you very much for the interview.

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Sunstar awards research and promotes Barcelona session at EuroPerio8

By DTI

LONDON, UK. In order to promote research on the association between periodontal disease and diabetes, as well as oral and systemic health, the Sunstar Foundation has been organising scientific seminars around the world since 2008. During Sunstar-sponsored sessions at EuroPerio®, international experts lectured on periodontitis and its oral and systemic effects, as well as the role of nutrition in severe periodontitis and new regenerative medicine options for periodontal patients. Over 600 dental professionals attended the sessions.

As a partner of the European Federation of Periodontology, Sunstar also hosted the fifth World Perio Research Awards, which were established in 2003. This year, the three winning papers were those submitted by Dr Lui Tan et al. (first place) from China, Dr Marjorie Jeffcoat et al. (second place) from the US, and Dr André Luis Caia et al. (third place) from Brazil. The awards recognise research advances in oral and systemic health.

Mayumi Kaneda, Sunstar’s global public relations director, told Dental Tribune in London: “For the Sunstar Foundation, it is very important to support researchers. I feel that this is our mission as a foundation and we really believe that it helps the development of science and will also translate to the patients in the end. The trophy for the prize was designed by Italian designer Claudio Hellini. It symbolises an infinity sign and expresses our wish for researchers never to stop continuing their work.” This trophy is also granted to winners of the Sunstar World Dental Hypersensitivity Award, which application deadline will be this year on 31 December.

“Sunstar is not only committed to supporting clinical studies and science, but we’re also committed to promoting education. Being seen as a partner in education at every stage is extremely important to us. We really want to help professionals become aware that, from the patient’s perspective, they are all key players when it comes to achieving a better quality of life, which is actually our foundation’s motto. We really believe in it—in all our efforts we have that goal in mind. One example is the project done in collaboration with Quinteresse Publishing to produce the latest chapter of the Cell-to-Cell Communication oral and general health animated video which premiered at EuroPerio.©, Kaneda stated.

Sunstar also announced the 19th Joslin–Sunstar Diabetes Education Initiative (JSEI) session, the fourth in Europe, to be held on 6 November in Barcelona in Spain. After the success of the 2014 BDSI seminar in Frankfurt, speakers from Spain and the US. Sunstar also announced that the 20th JSEI event will be held in Singapore in January 2016. Again, experts interaction between professionals, in fact, the interactive aspect is very, very important to us. We are trying to make everything comfortable enough to ask questions, as we really want to start discussions between these professionals.” Dr Marzia Massignani, Scientific Affairs Manager at Sunstar, said.

This year, Sunstar will be introducing an interactive JSEI concept to universities across Europe. Students will be able to take part in the event via a live webinar, enabling a greater audience reach. “We are collaborating with key universities from different countries that include JSEI in their education schedule. So far, the feedback has been very good and several universities have already agreed to be involved,” Massignani stated.

The seminar is supported by the Sunstar Group, the FDI World Dental Federation and the Sociedad Española de Periodoncia y Osteointegración (the Spanish society of periodontology and osseointegration).

Dental professionals can learn more about and register for the events at www.jsdei-seminars.com. More information about the company can be found at www.sunstar.com.

Sunstar awards research and promotes Barcelona session at EuroPerio8

With promising results from its app, Oral-B reveals new trial and whitening kit

By DTI

LONDON, UK. Users of electric toothbrushes are brushing over twice as much as users of manual toothbrushes, result- ing in a worldwide trend of improved oral care patterns, the dental professionals who manufacture Oral-B announced at EuroPerio in London. This promising data was retrieved from its recently improved Oral-B app, which is available to users of its SmartSeries power toothbrushes and allows dental professionals to manage and follow the brushing habits of their patients between appointments.

In addition to extended brushing times, over half of the recorded brushing ses- sions in the app included flossing, rinsing and tongue cleaning. Through a combination of these statistics and consumer feedback, the company deduced that users are encouraged to brush longer, but with less force, which is more aligned to their dental professionals’ recommendations. While Oral-B power toothbrushes have always offered users a great brushing experience, they are now able to assist patients in keeping up good oral hygiene between dental appointments, the company said.

Delegates were also able to experience the company’s newest Test Drive pro- gramme at one of Oral-B’s brushing booths at Euro-Perio. According to the company, this gave both dental professionals and their pa- tients the opportunity to try out their power tooth- brushes, without the risk of cross-infection, by using spe- cial handles and replacement heads that feature a sealing sheet that covers the handle itself. After cleaning and disinfecting it, the handle is ready to be used again with a fresh head.

Exclusively distributed in Europe by Henry Schein, Oral-B further revealed its new White Whitestrips, which is an easy home-whitening treatment that is said to offer results that last up to 14 days. They use the same enamel-safe whitening ingredi- ent that dentists use, which reaches below the enamel surface to remove stains. While a dental professional first applies the strips, consumers can perform all the subsequent whitening applications at home. The results are visible within 14 days, according to the company.

A Procter & Gamble oral care brand, Oral-B was a second sponsor of EuroPerio®. It also supported two sessions that focused on the issue of hypersensitivity, the challenges faced in professional and at-home treatments with regards to aesthetic demands and achieving long-term success.
Why dentistry needs branding

By Amanda Maskery, UK

Owning a dental practice or group has always presented challenges, but the marketplace has never been more crowded than it is now. With an ever-increasing level of choice for patients, it is more important than ever for dental businesses to stand out from the crowd. While we of course all know the value of providing a first-rate customer service, and that will always remain the most important factor, how many of us recognise the importance of creating and building a brand?

Generally, in dentistry, branding has not been regarded in the same way it is in the corporate world, where multi-national businesses expand on the strength of their brands. But now, with the growth of dental corporates and multi-practice groups, branding is becoming an increasingly important factor. That is not to say that branding is only the domain of the big players. Creating a brand which is unique and people can identify, talk about, recommend to others and remember is just as important for a single practice, and in some situations even more so, where there are other local competitors for existing and potential clients to choose from.

Effective branding is also important when looking to expand, franchise or sell one’s business. When dentists are adding another site to their existing portfolio, doing so under a brand will enable people to know who is moving into their area, and can help give confidence that this is an established dental business taking over their local site. One example being a business in North East England I act for, the Burgess & Hyder Dental Group, who now operate 11 clinics across the region under their brand. They are welcomed into each area as their brand is widely known, as is the quality associated with it.

Equally in franchising, the importance of a strong brand is crucial to enable a business to thrive in other areas relies on an existing strength of reputation. Through being part of that recognisable brand, patients will know that each site under that umbrella will offer the same levels of service and quality. Another of my clients, Damira Dental, has recently rebranded from Aspire Dental Care, and is pursuing a franchising model under its new and fresh identity. The business, which has 14 sites across the South of England, has amassed a strong reputation during its eight years in operation, and the strength of its service coupled with its branding will allow that to be replicated across the UK.

The creation of a brand identity, which can help support the expansion of a business, can also be of great importance when it comes to selling. It is much easier to market a business which is well known and has invested time and effort in standing out from the crowd. To a potential buyer, they are important factors in instilling the confidence to take on a site in a new territory.

In this day and age of dentistry being an increasingly competitive business, distinguishing oneself from the many other players has never been more important, and is something that must be given due consideration.

Amanda Maskery is one of the UK’s leading dental lawyers. She is Chair of the Association of Specialist Providers to Dentists (ASPD) in the UK and a Partner at Sintons law firm in Newcastle. She can be contacted at amanda.maskery@sintons.co.uk.
Online dentistry should be more active on Facebook

By Naz Haque, Dental Focus

It is commonly accepted that Facebook is one of the largest and most important online platforms in 2015. As it continues to dominate the social media landscape and hold a massive captive audience, the critical question is, are you utilising Facebook and, if not, why not?

Early 2015 statistics from We Are Social established that there were 1.366 billion active Facebook users in January 2015, 83 per cent of whom were accessing Facebook from mobile devices. Consider that the average social media user clocks in 2.2 hours of usage per day (15.4 hours per week), while the average daily TV viewing time for a professional is now reduced to 1.2 hours per day (8.4 hours per week)—you can see how social media is driving and changing people’s habits.

This year, Facebook has been pushing the Facebook pixel, which could loosely be compared to a website cookie. These can be created from your Facebook business page and then placed into the coding back-end of your website. The strength of these pixels is that they recognise visitors from your website and put you in a position to display adverts to this audience via Facebook. The real beauty is when one fully recognises the power of the pixel. Your audience may have found your website via Google, Bing, Yahoo!, Yell or word of mouth. The Facebook pixel tracks them and any pages they visit on your site. If a potential customer visits your tooth whitening page, for example, you can then show them tooth whitening adverts. Or if one looks at an Invisalign page, you can show them your Invisalign offer.

Essentially, you first qualify your audience and then show them adverts relevant to their habits. The data gathered from a pixel can be used to create a lookalike audience. Facebook will monitor habits and trends in the behaviour of visitors to your pages and then duplicate this on a larger scale by identifying users on Facebook who mirror these habits within the parameters you set, such as a 5 kilometre radius of your location.

There is one other trick Facebook pixel has up its sleeve: it allows you to upload e-mail addresses of customers/buyers so you can specifically target them with adverts too—just make sure you have their consent.

Most websites are now mobile friendly and most Facebook users are on mobiles. This increases the chance of your adverts being seen even further. The average cost of a click on Facebook is 27p, you can send targeted adverts to a specific qualified audience and buy data to a mirror audience for next to nothing, and the return on investment (150 + take-home trays) can be very attractive.

Considering all these points, I would make use of this opportunity as soon as possible in 2015 before everyone else does and drives up the cost of a click to something comparable to Google (a minimum of £2.50+).
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Endodontic treatment of teeth with significant coronal destruction is a very common clinical procedure in the restorative clinical practice. When we are faced with this clinical situation, there will be an eminent need for the use of intra-radicular retainers to obtain greater stability and retention of the restoration to the remaining teeth.1, 2

The use of an anatomical pin is proposed for the rehabilitation of anterior teeth with extensively compromised root canals and with significant loss of dentine tissue.3 In this restorative method, in addition to the fibreglass pin, a compound resin is used to model the radicular conduit with the objective of reducing the space that would be filled by the resin cement.

In this way, the combination of two restorative materials (pin and compound resin) will serve and behave biomechanically as a replacement of the dentine structure lost.4

Anatomical pins have an extremely favourable prognosis in cases of fragile roots due to loss of dentine structure and they contribute significantly to the rehabilitation of the tooth in terms of both masticatory function and aesthetics.5 In addition, the fibreglass pins have a more uniform distribution of tension in the occlusal and radicular regions compared with metal pins.6 Etching and silanisation of the pins are of the utmost importance for promoting interfacial adherence, especially in the region prepared for the core.7, 8

This study reports on a clinical case that demonstrates the preparation technique for the anatomical pin, using fibreglass pins and compound resin, in a maxillary central incisor with weakened roots, with the objective of re-establishing the coronal portion of the tooth.

Case report

A young male patient came into the integrated dentistry clinic at Universidade Severino Sombra needing restorative treatment of tooth #21. In the clinical and radiographic examination, significant coronal destruction and satisfactory en-
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The primary tooth with a triangular root, due to the significant destruction of dentine, was endodontically treated. Restoration with an anatomical pin was proposed to the patient, in order to recover the function and aesthetics of the tooth and provide for future rehabilitation of the tooth with a full ceramic crown.

First, the decayed tissue was removed from the remaining tooth structure and the fibre-glass pin was selected (Exacto SR, Angelus), as well as the accessory pins (Reforpin, Angelus, Fig. 4).

The radicular conduit was isolated with mineral oil and the compound resin was applied (Fill Magic NT Premium, Vigodent/COLTENE) over the remaining tooth with the aid of a Nr.2 Suprasil spatula (SS White, Figs. 5 & 6).

After filling of the conduit with resin, the Exacto pin and the pre-tilised accessory pins (Silano, Angelus) were inserted with the application of an adhesive (Fusion-Duralink, Angelus, Figs. 7–9). Next, the initial photoactivation was conducted on the pin and resin for 20 seconds.

Finally, the coronal reconstruction was performed with the previously used compound resin in incremental portions and photoactivation was conducted (Figs. 10 & 11).

A marking was made on the most incisal portion of the pins to guide the subsequent cropping of the pins (Fig. 12). The anatomical pin was then removed and the final photoactivation was performed for 40 seconds (Fig. 13). Soon after, the pin was adapted to the remaining coronal structure (Fig. 14).

After the preparation phase of the anatomical pin and coronal portion of the core with compound resin, preparation for adhesive cementation to the remaining tooth began (Fig. 15).

Acid etching of the pin was performed for 30 seconds, and then it was washed and dried. The silane was then applied (Silano) for 20 seconds, as well as the adhesive (Fusion-Duralink) with subsequent photoactivation for 20 seconds (Figs. 16–18).

After the anatomical pin had been prepared, acid etching was performed on the remaining tooth for 20 seconds, followed by washing and drying it lightly to leave the dentine moist (Fig. 19). The dentine primer and the adhesive (Fusion-Duralink system) were applied and then photoactivated for 20 seconds (Fig. 20).

The cementation was done with auto-polymerisable resin cement, waiting a period of 5 minutes for the cement to chemically set (Figs. 21 & 22). Once the cementation of the anatomical pin was finished, the adhesive was applied to the coronal portion and photoactivated for 20 seconds, and the compound resin was applied in incremental portions for creation of the core (Figs. 23 & 24).

In order to complete the restorative process, the prosthetic preparation of the core was performed for future seating of a full ceramic crown (Fig. 25).

Conclusion
The anatomical pin constituted a clinical alternative for coronal and radicular reconstruction of endodontically treated teeth with significant destruction of dentine. In addition to rehabilitating the tooth, this clinical approach promotes a more balanced distribution of masticatory forces without compromising the remaining tooth structure, minimising the risk of radicular fracture.

Moreover, this restorative alternative provides the possibility of an aesthetic result with the use of a metal-free full crown.

Editorial note: A complete list of references is available from the publisher.
Going (unintentionally) green

The unexpected bonus of switching to CAD/CAM and same-day dentistry

By Dr Joel Strom, USA

With dentistry as innovative and dynamic as it is, the progress made and the exciting new trends that result are often judged by the rate of the technological or financial. We can update our equipment to have a purely digital office, or we can adopt new practices and offer new procedures to our patients that bring in extra revenue.

While these accomplishments are certainly laudable, it is time for dentistry to measure its progress by different standards, ones that affect the profession and the world as a whole. In short, we can examine how our practices and procedures influence the environment and what dentistry as a profession can do to ensure this influence remains positive.

Fortunately, dental professionals no longer have to choose between advances in technology and what is considered "eco-friendly." In fact, practice owners can assure themselves of the best of both worlds by adopting digital technology, such as in-office CAD/CAM systems such as the Planmeca PlanScan System (E4D Technologies). While the practical and financial benefits of CAD/CAM technology are well established, the environmental benefits—though discussed less often and perhaps not as well understood—abound.

Switching to digital systems is beneficial not only to clinicians and patients but to the environment as well.

Amalgam restorations had been in use for decades, early adopters and technology enthusiasts have encouraged integration of these systems for various practical and ecological reasons. In particular, the use of all-ceramic restorations are new contenders for that title. In recent years, and when coupled with in-office CAD/CAM systems, their advantages are economical and ecological, in addition to aesthetic, biocompatible and functional.

The majority of the materials for same day CAD/CAM dental procedures are generally composite or all-ceramic blocks, so there is no metal involved. These metal-free restorations can often be used without reservation for various indications, including single-unit restorations, inlays and onlays. While the benefits of these materials have been well documented (e.g., aesthetics, ease of use, wear optical properties), they provide tangible environmental benefits as well.

For example, the longevity of all-ceramic restorations such as in-office CAD/CAM designed inlays is well documented. In addition to a high aesthetic restoration, patients receive restorations that will last for many years, without the concerns associated with amalgam, such as cracks, failures or potential mercury toxicity. This potentially saves patients and clinicians time, money and wasted resources that would be spent traveling to and from the dental practice, taking more impressions and fabricating new restorations.

Perhaps of greater consequence is removing toxic metal from this equation. All-ceramic and metal-free restorations mean that dental practices no longer have to worry about amalgam disposal and its accompanying mercury toxicity.

The Environmental Protection Agency (EPA) estimates that nearly 50 per cent of all mercury entering local wastewater treatment facilities originates in dental offices.

Amalgam restorations had been the standard of care in restorative dentistry for decades. With material science advancements, however, there are now new contenders for that title. In particular, the use of all-ceramic materials has significantly increased in recent years, and when coupled with in-office CAD/CAM systems, their advantages are economical and ecological, in addition to aesthetic, biocompatible and functional.

With dentistry as innovative and dynamic as it is, the progress made and the exciting new trends that result are often judged by the rate of the technological or financial. We can update our equipment to have a purely digital office, or we can adopt new practices and offer new procedures to our patients that bring in extra revenue.

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Currently, the American Dental Association (ADA) does not have national regulations in place for amalgam separators, so many dental practices and laboratories aren’t compelled to use them.

Although designing and milling all-ceramic materials still requires energy and results in some waste materials, can they really compare with the toxic by-products of metal-based restorations?

Crunching the numbers: CAD/CAM math

In-office CAD/CAM systems provide more than just a clear conscience about saving the environment. There are real, tangible benefits and savings that can easily be estimated to demonstrate the immense value of this digital technology.

Because same-day in-office CAD/CAM dentistry reduces the number of appointments from two (or possibly more, if the restoration does not fit) to one, it stands to reason that every dentist who incorporates these procedures would positively impact the environment by reducing the number of automobile trips patients make to the practice. This would result in a 50 per cent reduction in gasoline and oil product use.

With a carbon content of 2,421 grams, one gallon of gasoline produces approximately 19.4 pounds per gallon of carbon dioxide emissions. This is calculated by multiplying the carbon content (2,241) by the amount of carbon that remains unoxidized (0.99) by the ratio of the molecular weight of CO2 (44) to the molecular weight of carbon (12).

Using the state of California as an example, with approximately 10 per cent of the 100 million laboratory dental restorations completed in the United States every year, we can calculate an approximate savings. If four gallons of gasoline are used for a round trip to the dentist, a restoration needing two appointments to complete would require eight gallons of gasoline. But if these dental practices adopted same-day in-office CAD/CAM dentistry, that number could be cut in half, saving four gallons of gasoline per restoration. Four gallons of gasoline multiplied by 10 million restorations would equal a savings of 40 million gallons of gasoline for restorative procedures in the state of California alone.

This, in turn, would equal a reduction of carbon dioxide emissions by 776 million pounds per gallon each year (assuming the previously calculated 19.4 pounds per gallon measurement).

If we extrapolate to the United States as a whole, we can calculate that this would equal 400 million gallons of gasoline saved and 7,760 million pounds per gallon of carbon dioxide emissions eliminated, per year. This would all be due solely to a reduction in patient automobile trips to and from the dentist for restorative procedures. While same-day dental procedures may not save the world, their potential impact, even estimated, is undeniable.

Conclusion

In-office CAD/CAM systems’ advantages are limitless. In addition to the clear financial and practical benefits they bring, their positive impact on the environment makes the decision to upgrade even better. They remove toxic, wasteful and disposable materials and practices from the equation, replacing them with greener practices that have a tangible influence. While the clinical advantages of CAD/CAM systems and same-day dentistry continue to be rightfully celebrated, their ecological advantages should not be overlooked.

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References

Dental implantology: Evolution or the road to ruin?

ByAws Alani, UK

Teeth are highly evolved structures that have developed progressively over millions of years in attempts to protect themselves from caries and periodontal diseases. Over the years, many advances have been made that can treat these various diseases predictably. Various strategies have been developed to prevent or slow down these problems given adequate patient compliance and appropriate personal and professional maintenance.

Despite these very significant improvements, there are still instances when patients are advised that one or other tooth has to be extracted. It is the obvious sadness, heartache or despair that patients are caused by this bad news that has driven, caring clinicians to find ways to replace teeth with various devices, including dentures, bridges and implant retained prostheses.

P-I. Brånemark, now sadly deceased, famously quipped: “No one should have to die with their teeth in a glass of water beside their bed.” His original inspiration coupled with determination, intuition, passion and an ability to surround himself with a great team of individuals with differing skills made osseo integration much more predictable. Brånemark’s landmark studies changed prosthetic dentistry dramatically, but a careful look at the design of these protocols and the implants themselves reveal that they were hugely different to the patient selection protocols and the types of implants being placed today.

Furthermore, the restorations supported on them were made of the established materials then and obeyed traditional mechanical laws. In terms of biological cleanability, the metal, polished ‘high water’ abutment design allowed for optimal interproximal cleaning, while the implant surface itself was also relatively smooth in comparison with the rougher surfaces we often see today. Market saturation, cost, profit and market share in many technology-driven markets often pursue innovation of some sort of change to help gain greater market share or profit. The over-commercialisation of dentistry generally creates a constant turnover of supposedly new and better products, where the common notion of “if it ain’t broke don’t try to fix it” is lost on many directors of marketing or increasingly profit-driven CEOs.

Why and where?

Where this technological change has taken implantology and what the real reasons are that this was and is happening need to be examined. Increasingly, the shadow of peri-implantitis looms like a spectre over the provision of implants. Unlike caries or periodontal disease, there is very little consensus or agreement.
search that can provide a predictable cure for what now is a new breed of disease. Peri-implantitis is re-

Hever, less once established within fine threads of the implant, and the bone resorption and soft tissue problems that follow can result in spectacular problems. Part of the key issue prob-

ably lies in the surface exposed to the susceptible patient’s oral envi-

ronment, as most microorganisms will allege. The bacterial content and make-up of the biofilm is a reflec-

Hion of the surface on which it re-

lays. Implant surfaces have become progressively rougher in order to hasten the early osseointegration processes and to try to provide pa-

tients with their restoration quicker in an ever more competitive finan-

cial environment.

However, speed is not always help-

ful. Experience shows that some things are better achieved gradually.

Once exposed to the environment of a susceptible patient, the macro-

topography of the threads provides an ideal ecological niche for bacterial proliferation. Further nano-level features make the implant surface

a veritable inflammation super highway for the pathogenic organ-

isms. Predictably enough, the micro-

organisms found on the rough surface are usually the common pathogenic ones, but also some species are found that have previ-

ously never been discovered in the oral cavity.

Patient selection issues

We need to consider the types of patients whom we are now accept-

ing for implant provision. At King’s College hospital, the criteria for state-

sponsored implant provision largely involve patients with hypodontia and those who have suffered trauma.

Usually both cohorts are likely to present with poor maintenance, mis-


eally restored dentition with scope for oral health improvement prior to considera-

tion for any restoration, let alone an implant. Unfortunately, we are unable to provide this treat-

ment for smokers.

This is in stark contrast to the patients who may be provided with implants in general and specialist practice, such as patients who are likely to have lost teeth as a result of plaque-associated diseases. Indeed, it could be considered a paradox by many interested obser-

vers that some clinicians are providing patients with periodontitis when they have shown that they are highly prone to plaque-associated disease via tooth loss and have not demonstrated any real capacity for changing that. Patients who smoke, those with a history of periodontitis and those with poor oral hygiene are well known to be at a very significantly higher risk of peri-implant.

Biological versus mechanical problems

If we are being frank, the pathogenic bacteria-induced diseases are not the only long-term problem that we are now seeing. The reported frequency of mechanical complications has risen over the years, but the reported prob-

lems are probably only the tip of the iceberg, as many complications have not and will not be reported for a variety of understandable reasons.

Contrary to popular belief, implants and many would consider the approach to be foolish. How many ‘implantologists’, doing that to others would genuinely have it done to themselves or done to some close family member?

Planned obsolescence

A state-of-the-art implant today is likely to be obsolete tomorrow. Elimi-

nating teeth is irreversible and replacing teeth with implant-

retained devices means that patients are trapped in the era of the implant-

tology in which these were placed and restored, that means issues of ma-

chining, surface blasting, roughness, platform switching, design and at-

tempts at bone augmentation by cote, coral or Californian substances. The list goes on and on and will prob-

ably continue to expand with what many might consider human exper-

imentation without licence.

Now comes the time for implant manufacturers to take stock of their many ‘market-driven’ mistakes, in-

cluding fast initial integration with the toughest possible surfaces. Instead they need now to produce proven (i.e. not speculative) designs to better prevent these well-known problems of infection and breakage.

A wiser, pragmatic approach ap-

pears to be to concentrate everyone’s efforts on saving teeth and thereby oke out their usefulness for the patient’s system and to some extent even for Prof Jan Lindhe, interviewed in the British Dental Journal, summarised the state of play as follows: “There is an eversence of implants in the world and an under-

course of teeth as targets for treatment.”

Ethical, moral and legal issues

These problems become much more worrying when viewed from ethi-

cal, valid consent and medico-

legal perspectives. This is particularly so when patients are convinced to undergo elective extractions of teeth that often seem reasonably intact or treatable with conventional proven treatment strategies.

It appears that there is a worrying drift towards aggressive treatment with extractions in order to provide a supposed full-mouth rehabilitation with multiple implants. The increas-

ingly dubious practice of sacri-

ficing teeth for the sake of implants appears to many concerned clinicians to be quite irrational. As ethical oral health practitioners, deliberately removing savable teeth for prophylactic im-

planting using implants as support ap-

pears to be consciously flying in the face of increasingly apparent evi-

dence of various complications with implants and many would consider that approach to be foolish. How many ‘implantologists’, doing that to others would genuinely have it done to themselves or done to some close family member?
Managing patients with risk factors

By DTI

GILLINGHAM, UK/GOTHENBURG, Sweden: Requests for shorter treatment times along with an increasing number of patients with risk factors place greater demands on dentists and technology. Correctly assessing osseointegration and implant stability is key in successful implant treatment. Using traditional methods such as torque and percussion tests are not suitable for monitoring osseointegration, it requires a more advanced diagnostic tool.

Gain insight from these esteemed periodontists on what they do to objectively and noninvasively identify which implants are ready to load and which ones need additional healing time.

Drs Pamela K. McClain and Rachel Schallhorn, both Diplomates of the American Board of Periodontology, have been using Osstell and the ISQ scale (Booth 43d) for a number of years now to measure primary implant stability and osseointegration.

“We are currently using Osstell when we place all implants to establish a baseline measurement of implant stability,” they say. “At the time of placement if the ISQ is too low (depending on the location—anything below 40) we will remove the fixture, possibly graft and then wait another 3–6 months before trying to place another fixture. We try to take the measurement on the buccal/lingual, mesial/dental aspects and record the highest and lowest values.”

McClain and Schallhorn add: “We typically recheck the ISQ value at three months. If the ISQ has improved (or is stable if the number was high to begin with—over 65) we will release the patient for restorative treatment. It gives us and the patient a more objective way to assess the implant stability. If it’s not ready at that time we continue to recheck every six weeks until the ISQ has improved or indicates stability.”

“Since we began using this device in 2009, our decision making process has become more simple and objective. We will continue to use the Osstell value to help guide treatment decisions and as a communication tool with our referring dentists.”

Dr Paul Rosen, Clinical Professor of Periodontology & Oral Implantology Temple University Kornberg School of Dentistry in Philadelphia, USA, also explains below why Osstell is important in his practice.

“Osstell use is critical for my implant practice. Every year, this device more than pays for itself as there are always several patients who heal slowly or who have implants placed with extremely low insertion torque. This confounds my ability to predict when healing has been adequate to proceed to the restorative phase. Osstell provides me with quantitative information necessary to make informed decisions. No longer am I the villain who slows up patient care, but it is objective data about the patient’s healing that becomes the determining factor.”
Peri-implantitis: Is it a crisis?

By Dr Michael R. Norton, UK

In the US over 500,000 implants are placed each year, whilst in the UK that figure was around 140,000 for 2010. The prevalence of peri-implantitis has been reported to be up to 29 per cent, most notably in patients whose implants are placed within a partial dentition. This yields a potentially vast number of implants, possibly as many as 185,000 in the US and UK alone that might succumb to some form of peri-implant disease on an annual basis.

The bacteria found within peri-implant lesions are similar to those found in deeper periodontal pockets, and cross infection by periodontopathogens as a primary aetiology has been implicated as a possible pathway. However the wide variety of implant designs, surfaces etc. make the treatment of peri-implantitis much less predictable and subject to much greater variability than periodontal disease. Where no warnings and/or support for the clinician to choose a regimen are indicated. The treatment via surgical intervention and antimicrobial therapy are indicated. The treatment typically requires surgical access to excise any fibrous capsule and for direct access to the implant for surface decontamination. The author has recently conducted a systematic review of the literature regarding peri-implantitis using PubMed and the clinician to choose a regimen that is both within the reach of the average clinician and has some documented reliability.

Risk factors

There have been a number of risk factors cited for peri-implantitis. Recently, in a study published in the Journal of Clinical Periodontology, a clear association was demonstrated through multi-level statistical analysis between risk of peri-implantitis and location, specifically the maxilla while overt peri-implantitis was shown to be highly correlated to patients with a predisposing history of periodontitis, and being male. Surprisingly as this particular study no correlation was demonstrated with smoking, poor oral hygiene, and prosthetic design which are of course inter-related with some prostheses making effective oral hygiene untenable, while others present deep margins that make removal of excess cement almost impossible.

Warning signals

Peri-implantitis rarely presents unannounced unless of course the patient fails to be placed on a regular recall programme or fails to attend for regular review. Early signs are often apparent in the form of peri-implant mucositis. This condition is characterised by mucosal oedema, rubor and bleeding on probing (ROP). By definition it is not associated with purulence or bone loss. However once peri-implant mucositis has taken hold it is unfavourable that it is often exacerbated by the design of implants today. The presence of a rough surface, by the presence of vertical or crateriform surface with titanium or carbon fibre currettes, while two others compared the combined therapy. Nevertheless a multitude of other studies have also been published reporting on the efficacy of tetracycline, CO2 laser, and photodynamic decontamination amongst others in the treatment of peri-implantitis. Such a plethora of therapies makes it difficult for the clinician to choose a regimen which is typically only diagnosed at routine recall. Hence there is a need to recognise that when implant treatment is completed the patient should remain on annual reviews for at least the first five years, and thereafter once every two years.

On presentation with mucositis a combination of mechanical debridement and sub-mucosal decontamination and antimicrobial therapy are indicated. The treatment should be repeated three times within a two week period, so-called Triple Therapy (Norton M). The protocol is as follows:

1. Mechanical scaling of implant surface with titanium or carbon fibre curettes.
2. Sub-mucosal irrigation with 3–5 ml chlorhexidine (0.2%) per site, at the deepest level of the pocket on all sides of the implant.
3. Application of Minocycline Gel 2% (Dentomycin, Henry Schein) at the deepest level of the pocket on all sides of the implant.

Other factors that have been implicated include excess cement, like bone defects and spontaneous purulence and bleeding on palpation (Figs 1-4). It is typically associated with deep peri-implant pocketing >3 mm.

This condition is undoubtedly of increasing concern due to some principle factors, such as the almost exclusive use of roughened implant surfaces, the treatment of partially denatured patients with a history of periodontal disease, the placement of implants with inadequate bone volume resulting in facial dehiscences, as well as the use of cement retained prostheses.

Implants with a micro-roughened surface texture have presented excellent long-term data and until recently there has been very little published in the literature demonstrating a susceptibility of these surfaces to this condition. However recent work by Alhoub et al. has received widespread attention with concern for the evidence that suggests some modern micro-textured surfaces may be completely resistant to decontamination.

Ultimately, if left unchecked and untreated, it may become impossible to arrest the condition, leading to wholesale failure of the case (Figs 1-4). Such failures impose a tremendous strain and burden on the clinician (let alone the patient), destroying the confidence of a patient who has endured significant expense and trauma and occasionally results in a breakdown of communication between both parties that all too often sadly results in a legal claim of negligence. Such claims can be hard to defend for patients where no warnings and/or supportive periodontal peri-implant therapy have been undertaken.

Treatment typically requires surgical access to excise any fibrous capsule and for direct access to the implant for surface decontamination. The author’s preference until now has been to use chlorhexidine and tetracycline solution for this purpose while others have reported the use of citric acid and hydrogen peroxide amongst others. The use of lasers has also been extensively reported. However in a recent systematic review a meta-analysis could only be done for Er:YAG laser as the literature on all other laser types was weak or heterogeneous.

The author has recently completed the acquisition and treatment of 20 patients in an efficacy study using Er:YAG water laser (Morita, ADERI Evo) and it is hoped that publication of the results will be forthcoming. Indeed promising data has already been published to date using this same machine.

Nonetheless this methodology remains one of the most general practitioners and has yet to be proven predictably effective. As such most attention therefore remains focused on non-surgical decontamination via surgical intervention and topical antimicrobial therapies.
Open flap debridement, defect decontamination, and repair as well as pocket elimination have all become the mainstay of those treating this condition.

So is there a crisis? The problem is that there is no clear consensus on the prevalence of the disease since this will vary according to the cut off values for the clinical parameters measured and to date there appears to have been little consensus on these cut off values. As such estimates of incidence of the disease appear to vary from 28 to 56 per cent of subjects and 12 to 43 per cent of implant sites.

Furthermore there is an ongoing controversy about the initiating process of peri-implant disease since it is potentially considered a primary infection of periodontopathic origin by some while others hold that it is a secondary opportunistic infection subsequent to bone loss caused by other etiological factors such as a provoked foreign body reaction or iatrogenic dehiscence of the bone, exogenous irritants such as dental cement, bone loss through occlusal overload etc. If the latter is true then controlling the disease is theoretically made more simple by controlling the conditions for the implant, such as ensuring adequate buccal bone thickness, avoiding or controlling more carefully the use of dental cement, and paying closer attention to the occlusion.

In an effort to gauge the rate of mucositis and peri-implantitis requiring surgical intervention, the author audited his patient pool in the year 2015. Out of a total of 191 patient reviews constituting 795 implants only 15 patients (7.9 per cent) required triple therapy at 20 implants (2.5 per cent) for mucositis while 10 patients (5.2 per cent) required surgical decontamination at 10 implants (1.3 per cent).

As can be seen this is well below the figures proposed in the article by Zitzmann & Berglundh (2005). This may of course reflect a more liberal approach to cut off values for parameters such as pocket depth and bleeding on probing as proposed Klinge in 2012.

Nonetheless after over 20 years running a practice dedicated to implant dentistry the author’s own audited failure rates indicate that less than 1 per cent of implants present as late failures, owing to peri-implantitis or fixture fracture as a result of bone loss. This would corroborate the findings by Jemt et al in which a cohort of patients already diagnosed with peri-implant bone loss showed a slow rate of additional progressive bone loss over a 9-year follow-up with an implant failure rate of 0.1 per cent.

In all likelihood it is the author’s view that peri-implantitis is only a crisis if we allow bad implant dentistry to persist where there is a lack of control of the initiating factors as described above, and that it is more rather than less likely that it is the result of a secondary opportunistic infection rather than a direct susceptibility to primary infection of periodontopathic origin. However, there will clearly be some patients with a high genetic susceptibility with other predisposing factors such as the presence of untreated periodontal disease, smoking and diabetes who may succumb as a result of primary infection.

Furthermore there remains a clear need to better define the different types of peri-implant disease and to establish a consensus as to the cut off values for the different parameters used to evaluate the disease so that future figures for incidence and prevalence are comparable.
Making implantology affordable

Controlling costs and increasing access to dental implant treatment

By Dr Tuss Tambra, UK

Implant dentistry is an elective restorative treatment solution with a surgical component and a denture component. If properly executed, it is one of the most successful and clinically researched treatment modalities in dentistry. Unfortunately, patients who are not disease-free are being treated with dental implants and, as a result, the litigation rate has risen sharply.

A success rate of 98 per cent is almost universally claimed when promoting implant dentistry to patients. So, if implant dentistry is 98 per cent successful, then why are more cases failing and why is litigation increasing? Lack of proper training, poor treatment planning and poor execution (surgical and restorative) are undoubtedly the main culprits. If a clinician has the appropriate surgical and restorative training in dental implantology, does the brand of dental implant used make a clinically significant difference to the success rate? Does paying more for the implant and restorative component necessarily provide better results? Why is price an issue?

Price should generally not prevent access to high-quality, well-researched and effective dental treatment. However, the current pricing structure in implantology means that a huge proportion of patients do not have the disposable income to cover the cost of such treatment. The McCull study demonstrated the numerous benefits (functional, clinical, psychological and general health) for dentulous patients in whom dental implants were used to stabilise complete dentures. The improvements in chewing efficiency, general health resulting from an improved diet and general well-being (more social interaction owing to a lack of fear of teeth falling out) shows the significant impact dental implants make in society as a whole.

How can this situation be changed to allow more potential patients to access dental implant treatment? First, clinicians could significantly reduce fees charged to patients. This can be achieved if the component and laboratory costs are reduced, with the dentist passing the savings on to the patient. Another option is that dental implant companies reduce the prices of both implants and restorative components. According to the industry, however, prices across the industry are already competitive and companies need to cover their business costs.

Is there an alternative to the above? Clinicians cannot reduce charges without assistance from the dental implant companies and all dental implant companies are private businesses with shareholders who want to produce products (implants) that benefit society and see some return on their investment in terms of profit generation.

Economic drivers

Market forces must come to bear in dentistry. In the current global economic climate, ignoring the financial implications of the decisions we make is no longer an option. Patients expect high-quality, safe and affordable treatment. For this to happen, clinicians need to source products at a reasonable price point, passing on these savings directly to the patient, reducing overheads and treatment charges and, therefore, increasing access to treatment. Some of the prestigious implant companies have already felt the impact of the loss of market share and have either bought out competitors, created joint ventures or incorporated competing products into their product lines.

Do smaller implant providers offer potential benefits? One is certainly their ability to respond more quickly to increased patient expectations of treatment. The rapid expansion of digital dentistry, CAD/CAM technology and intra-oral scanning is resulting in smaller companies able to provide patients with a total, open-source guided surgery and restorative solution. With larger companies, the ability to change direction is much more difficult and time-consuming, turning an oil tanker takes more time than a dinghy.

Key points of consideration when reviewing a new implant system

Globally, all medical and dental products undergo strict vetting procedures to ensure patient safety, including product durability testing, animal studies, human trials and testing at universities. They are then required to obtain a CE mark, FDA approval or some other approval to allow the products to be used in clinical dentistry. In short, once a product has a CE/FDA mark, it meets all the necessary testing and patient safety requirements to be used on humans.

A clone connection implant can thus be restored with a high-end restorative component provided by another implant company using patent-free connections by open-source milling centres that can provide these components for significantly lower costs. One caveat with open-source milling is to check the quality of the milling provided in order to avoid the complications that arise from poorly fitting restorations.

Systems like the iXX now provide non-precious metal blanks with pre-milled implant connection interfaces and ceramic blanks bonded to adhesive base components. It is a pre-milled titanium implant connection that is bonded to the all-ceramic block. It is the milling of the implant connection interface that is the most vital part of the process. If an open-source centre can provide pre-milled connection blank, then its work is much reduced and the dentist can be rest assured of a high-quality component with an accurate fit. The benefit of adhesive bases in all-ceramic work is the improved strength of the connection and reduced fracture rates compared with all-ceramic abutments.

Is using one of the clone connections listed above an issue? All these connections function with excellent long-term, clinically documented results. The key factor for success is the closeness of fit between the internal/external implant connection and the mating surface of the abutment, also called the micro-gap. This produces a stable, rigid connection with no abutment movement under loading. A stable implant-abutment interface combined with platform switching is the key to bone preservation around the neck of the implant and avoiding screw loosening.

How can one most easily compare multiple connection platforms in a simple and easy to understand way without needing a degree in mechanical engineering? Engineer Holger Zippich from Goethe University Frankfurt’s dental school in Germany has produced real-time videos of...
several implant-abutment interface responses to loading that are available on the Internet. Once these have been viewed, a rational decision as to which connections are more stable (rigid) can be reached. This information then applied to selecting an implant system.

Does the system offer a wide range of prosthetic, CAD/CAM and guided surgery solutions for dental implant treatment? Once a dental implant system has gained some degree of market penetration (or traction) and has documented clinical effectiveness, it is worthwhile taking an unbiased view of the system. Hopefully, most glitches would have been identified and corrected by the early adopters, thus reducing the risks for the more cautious clinicians.

A personal recommendation is to view the restorative aspects first (restoratively driven treatment). Questions to be asked include whether the system has a broad range of components and if it meets the needs in implant dentistry; CAD/CAM-based treatment solutions and a guided surgery solution; the surgical placement of dental implants; if you are impressed by what you see; then place a few implants and monitor them closely. If the treatment outcomes are successful and you have a positive impression of the system, then there is no reason that you should not add a cost-effective solution to your implant portfolio.

What impact does the macro-geometry (implant shape) and micro-geometry (surface treatment) have in relation to long-term success? The surface treatments applied to various implant systems are designed to improve the degree of osseointegration and bone-implant contact.

This is extremely important for the long-term preservation of implants. Smooth or machined surfaces clinically show reduced levels of osseointegration, so the current thinking seems to be that micro-roughened surfaces provide the optimum surface for osseointegration.

An affordable implant solution

The low cost system that will be used here for comparison is the ICX system manufactured by Straumann in Germany. On the market for several years and well-known in Europe, it has recently arrived in the UK as part of the company’s global expansion. All of its research has been conducted and validated by several prestigious institutions, adding weight to the product, and its research has been conducted and validated by several prestigious institutions. The research and clinical data (conventional and guided surgery solutions) and results of several RCTs, often at high risk of bias and with rather short follow-up periods. The full report can still be accessed online, as can the previous debate by various implant manufacturers and clinicians largely because of its conclusions, which are reproduced here directly from the summary of the report. “Based on the results of the included RCTs (randomised controlled trials), we found no evidence showing that any particular type of dental implant had superior long-term success. There was limited evidence showing that implants with relatively smooth (turned) surfaces were less prone to lose bone due to chronic infection (peri-implantitis) than implants with much rougher surfaces (blasted and plasma-sprayed). These findings were based on several RCTs, often at high risk of bias, with few participants and rather short follow-up periods.”

In summary, use of a cost-effective dental implant system (in the author’s opinion) is justified in terms of economic savings to the patient and increasing the reach of dental implant treatment to the wider public. It is reasonable once the system has been clearly validated for use in general dentistry (CE mark, FDA approval) and should be considered a viable clinical option once the dentist has reviewed the available clinical data (conventional and guided surgery solutions) and results of several RCTs, often at high risk of bias and with rather short follow-up periods. The full report can still be accessed online, as can the previous debate by various implant manufacturers and clinicians largely because of its conclusions, which are reproduced here directly from the summary of the report. “Based on the results of the included RCTs (randomised controlled trials), we found no evidence showing that any particular type of dental implant had superior long-term success. There was limited evidence showing that implants with relatively smooth (turned) surfaces were less prone to lose bone due to chronic infection (peri-implantitis) than implants with much rougher surfaces (blasted and plasma-sprayed). These findings were based on several RCTs, often at high risk of bias, with few participants and rather short follow-up periods.”

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Reference


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The ICX implant has a tubular titanium dioxide surface (Ra of 1–3 μm) with a pure titanium dioxide surface with no additives.

The implant was previously described as having a hydrophilic surface. However, claim was successfully challenged by Steinmann and is no longer used to describe the implant. The surface is currently being updated.

As a prosthodontist working in private practice and having used what is outlined above is how I personally approach new implant systems. There is very little clinical research comparing the various dental implant systems directly to one another and a significant proportion of studies published cannot be directly cross-compared as there is no standard clinical method for doing so. All of the variations in implant geometry, surface treatment, and restorative solution in addition to the operator variables (the surgeons involved, their individual skill sets and the correlation of the statistics) all make such direct comparisons between implant systems a potential minefield.

Are there any independent reviews of published articles that might be a source of further information? Possibly the Cochrane report, which is an ongoing study. The Cochrane Collaboration is a global, independent network of researchers, professionals, patients, carers, and people interested in health who gather and summarise the best evidence from research to help make decisions about health care. It does not accept commercial or conflicted funding and has contributors in over 120 countries. Starting in 2003 with follow-up reports conducted in 2005 and 2007, the group published its latest evaluation last year: The full report can still be accessed online, as can the previous versions. It has led to intense online debate by various dental implant companies and clinicians largely because of its conclusions, which are reproduced here directly from the summary of the report. “Based on the results of the included RCTs (randomised controlled trials), we found no evidence showing that any particular type of dental implant had superior long-term success. There was limited evidence showing that implants with relatively smooth (turned) surfaces were less prone to lose bone due to chronic infection (peri-implantitis) than implants with much rougher surfaces (blasted and plasma-sprayed). These findings were based on several RCTs, often at high risk of bias, with few participants and rather short follow-up periods.”
The glass hybrid revolution

EQUIA Forte
from GC

EQUIA Forte takes the proven EQUIA approach to the next level. No need for conditioning or bonding with its built-in universal adhesive technology and outstanding wettability. EQUIA Forte is extremely tolerant and bonds equally well to all surfaces even in the deepest of lesions. With EQUIA Forte Coat acting like a lustre coating, you save on polishing time and achieve excellent aesthetics in no time.