Landmark dental event opens this month in London

By DTI

LONDON, UK: This month, London will be welcoming experts in periodontology and dental implantology from Britain and the continent to the next pan-European meeting of the European Federation of Periodontology (EFP). With preparations finalised in May, dental professionals are invited to learn about the latest trends and developments in both fields, the organisation said.

Headed by King’s College London Prof Francis Hughes, EuroPerio8 is expected to bring together thousands of members of the profession at the ExCeL London Exhibition and Convention Centre from 3 to 6 June. Hughes told Dental Tribune Online earlier that participants can look forward to one of the largest and most successful congresses on periodontology and implant dentistry ever held in Europe.

Over 100 distinguished international speakers have confirmed their participation in the scientific programme, which will be complemented by a number of sponsored sessions and free oral sessions selected from submitted abstracts.

“There is lots for all the dental team,” Hughes said. “We are particularly keen to attract many general dentists and hygienists. This is a great opportunity for us to promote the profile of periodontology within the profession and more widely in the population both within the UK and throughout Europe.”

According to a recent study conducted by Barts and The London School of Medicine and Dentistry in London, periodontitis, particularly in its severe form, remains highly prevalent around the world, with almost every tenth person suffering from the condition. In Britain, at least one in 15 adults are currently affected by the most severe form of periodontal disease, according to National Health Service figures.

Experts will discuss these developments at EuroPerio8, as well as other issues in the field. The event will also be a showcase for the most recent product innovations in oral health, which will be presented by up to 80 sponsors, including the UK’s own Dentaid, as well as major international dental consumables companies Johnson & Johnson, Oral-B and Sunstar.

Elected EFP President Prof Phoebe Madianou from Greece stated, “A major priority for EFP is the general recognition of periodontology as a dental specialty in Europe. Therefore, the organisation is working with all relevant parties to promote the rationale of periodontology being recognised among regulators, licensing bodies and policymakers across Europe. Closely related to this goal of full recognition is the creation of a common curriculum for postgraduate study in periodontology, promoted by the EFP according to standardised criteria, a project aimed at enabling free mobility of periodontal professionals and citizens across the EU, the ultimate aim being to improve the quality of treatment and people’s general health.”

Currently, the EFP represents 16,000 dental professionals, who belong to its 29 member associations, including the British Society of Periodontology located in Rutherford. Its last congress brought more than 7,000 visitors to Vienna in Austria in 2012.

For more information, news and updates please visit the event website at www.dental-tribune.co.uk.
With over 100 internationally prominent experts, EuroPerio8 will again present an extensive and highly diverse scientific programme. What session can visitors particularly look forward to and what are your personal highlights?

The scientific programme is really top notch and diverse. There is something for everyone. Scientific Chairman Prof. Mariano Sanz has been very creative and has done a really excellent job.

There will be parallel sessions with different themes and for different target groups. Master Clinician Forums aimed at surgical experts, many sessions dealing with all aspects of implant therapy, sessions on realizing modern periodontology in daily practice, as well as a whole lecture series about the current understanding of aetiological pathogenesis of periodontitis. All these are presented by the absolute best in their respective fields.

Personally, I am looking forward to the keynote lectures on Saturday, as well as the many short presentations given by our younger generation, who have found an appropriate place within the main scientific programme. I also recommend that visitors not miss our closing event on 6 June. While I am not supposed to reveal more information at this point, attendees can be sure it will be a cracker!

The issue of peri-implantitis is more relevant than ever with an increasing number of implants being placed worldwide. How is this important area reflected in the programme?

Several main sessions are dedicated to this area and there will be a number of internationally renowned experts, including EFP General Secretary Prof. Stefan Kerner and EFP-treasurer Jørg Meyle, who will speak about this issue. Moreover, some of the scientific short presentations will deal with peri-implant disease from a patient’s perspective. This will be followed by a podium discussion involving patients and clinical experts.

Despite a high prevalence, periodontal disease still does not attract the attention it deserves, even in developed countries. Where do you see the main obstacles and what can be done to raise awareness among professionals and the general public?

The same message is carried by the manifesto and we invite everyone to support this mission by signing it at www.efp.org/efp-manifesto.

Next year, the EFP will be celebrating its 25th anniversary. How do you see the role of the organisation within dentistry, and what goals are on the agenda for the time being?

We will certainly celebrate this anniversary properly at the general assembly of all national member societies of the EFP next year in Berlin. However, the party starts already here in London, where our colleagues and friends from all over the world are assembled. At this point, the EFP is already one of the worldwide driving forces in the field of periodontics and implant dentistry. Its influence on dentistry, particularly through its annual congresses (European workshops) and EuroPerio, should not be underestimated. We also have to acknowledge the EFP’s Journal of Clinical Periodontology with its editor Prof. Maurizio Tonetti.

For the next three years, we are planning to advance our vision of “Periodontal health for a better life”. For this, we will communicate the most important findings from our conscious conferences with regard to the interrelationship between oral and general health, as well as the prevention of periodontal and peri-implant disease, to the public. As mentioned, we are currently in preparations to launch a European-wide campaign.

Thank you very much for the interview.

The high prevalence of periodontal disease is alarming

An interview with EFP President Prof. Sørøen Jepsen, Germany, about EuroPerio8 in London

EuroPerio8 will be officially opened at the ExCeL London Exhibition and Convention Centre in London in June. Dental Tribune UK had the opportunity to speak with the President of the European Federation of Periodontology (EFP), Prof. Sørøen Jepsen from Germany, in advance about the importance of the event and why he recommends attending it.

Dental Tribune UK: This month, the EuroPerio conference will be held in the UK for the first time. How was collaborating with the British periodontal societies, and what is your assessment of the preparations in general?

Prof. Sørøen Jepsen: Collaborating with EuroPerio Chairman Prof. Francis Hughes, who lives and works in London, was absolutely fantastic. We all enjoyed his great ideas, enthusiasm and humour.

The British Society of Periodontology with its president, Prof. Ian Chapelle, and chair of the EuroPerio Ambassador Programme Prof. Nikos Dones in particular, significantly contributed to the event. Both the current and past presidents of the British Society of Dental Hygiene and Therapy, Julie Rosse and Michaela O’Neill, were also highly involved in the local organizing committee and thanks to them we will see many dental hygienists coming to EuroPerio8.

I would also really like to thank the many students from the various dental schools in London who agreed to volunteer at the event.

The European Federation of Periodontology (EFP) and the British Society of Periodontology (BSPD) have worked together for years, and both parties are very proud to constitute this year’s EuroPerio8. The event is attended by many students from the various national member societies, which seeks to show what it means to to acknowledge the EFP’s Journal of Clinical Periodontology with its editor Prof. Maurizio Tonetti.

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“EuroPerio8 has clearly become the worldwide largest congress in the fields of periodontics and implant dentistry.”

The high prevalence of periodontal disease is alarming and demands significantly higher awareness and thorough prevention.

The interaction between periodontal and general health will also play a prominent role, starting with a world premiere of a film on Thursday morning.

Will there be new offerings compared with the last congress in Vienna?

For the first time, we will have the Patient Engagement Session on Wednesday afternoon. There, Prof. Ian Needleman and his team from London will present a film titled The Sound of Periodontitis: The Patient’s View of Gum Disease, which seeks to show what it means to suffer from periodontitis and to have periodontal treatment done.

Indeed, we know that more than 50 per cent of the adult population have periodontal disease. Severe periodontitis affects 1 per cent of the population and is the sixth most prevalent condition worldwide. Not many people actually know this, as well as the fact that non-treated periodontal disease can have negative consequences for one’s general health. The high prevalence of periodontal disease is alarming and demands significantly higher awareness and thorough prevention.

We intend to communicate these messages at a large press event to be held in London. Furthermore, there will be parallel sessions with different themes and for different target groups. Master Clinician Forums aimed at surgical experts, many sessions dealing with all aspects of implant therapy, sessions on realizing modern periodontology in daily practice, as well as a whole lecture series about the current understanding of aetiological pathogenesis of periodontitis. All these are presented by the absolute best in their respective fields.

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Thank you very much for the interview.
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!

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7. VICTORIA & ALBERT MUSEUM
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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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Where periodontology has advanced

A critique of current trends in the field

By Prof. Mark Bartold, Australia

Over the past 20 years there have been some exceptional advances made in periodontology. Many of these terms have driven not only our thinking and our approach to periodontal therapy. In 1999, the American Academy of Periodontology (AAP) devised a “new” classification system for the periodontal diseases. From this some 50 different types of periodontal conditions were identified which were considered worthy of individual classification. Clearly this was an unwieldy system and in reality it was distilled down to three main types of plaque-associated periodontal diseases: gingivitis, chronic periodontitis and aggressive periodontitis.

While the appropriateness of the terms “chronic” and “aggressive” have been debated they have served as a framework for both clinicians and researchers to define specific types of periodontitis with identifiable clinical parameters. It also provided a framework for understanding management protocols and outcomes. Nonetheless, over time it has become evident that such a classification system (chronic and aggressive) may be too simplistic because of the heterogeneity of the periodontal disease. Therefore, it may be timely to revisit such a classification system and determine whether current understanding of the epidemiology and pathology of these diseases can be used to better define them.

However, it is worth noting that in the past 25 years there have been at least 50 different classification systems proposed, none of which have been fully adopted. Clearly there remain a number of important challenges in this field. Since chronic and aggressive periodontitis are heterogeneous groups of diseases, for example, there will be unique subcategories based on their multifactorial nature basis of microbial, host response and environmental components. At present, apart from “plaque-associated” designation, the current AAP classification is not based on cause-related criteria.

Recognition that bacteria are necessary but not sufficient for periodontitis to develop

During the 1980’s a very important conceptual advance occurred in our understanding of dental plaque as an interfacial community within the subgingival environment. The recognition that subgingival plaque existed as a biofilm with its own regulatory and communicative properties changed our thinking of how the subgingival microflora interacted not only with itself but also the host. Notwithstanding this research through the 1990’s and 2000’s began to question the role of the biofilm and its component bacterial consortia in the overall process of the development of periodontitis. While it was very clear that periodontitis cannot, and will not, develop in the absence of bacteria, it was becoming increasingly obvious that clinically there were some patients who, despite the presence of considerable plaque deposits, did not develop periodontitis. On the converse it was also evident that there were individuals who had very minimal visible deposits of plaque yet developed very advanced and destructive periodontitis.

Development of the subdiscipline of Periodontal Medicine

The term “Periodontal Medicine” was first proposed by Offenbacher in 1997 as a broad term that defines a rapidly emerging branch of periodontology focusing on new data establishing a strong relation- ship between periodontal health or disease and systemic health or disease. It arose with the emerging evidence suggesting that a number of systemic conditions and periodontal disease were inter-related. By 2000 the evidence that oral health and systemic health should not be separated had become very compelling. Indeed the relevance evidence to indicate this may be the case for diabetes, cardiovascular disease and rheumatoid arthritis. Unfortunately this has become an opportunistic field of research and to date some 58 conditions have been claimed to fall within the periodontal disease/systemic disease axis, most of which have little or no biological or clinical plausibility.

“...It remains to be established whether treatment of periodontitis has any impact on systemic conditions...”

These observations led to a major paradigm shift in periodontology in which it was agreed that although plaque was necessary for periodontitis to develop, it was not sufficient for it to develop. Indeed it became evident that in addition to dental plaque, environmental and host response factors were critical for the clinical manifestation of periodontitis. With this came a new more informed management process for our patients which dictated that in addition to management of oral hygiene patients must be assessed for other factors which would lead to the development of periodontitis and these must be controlled in order for treatments to be successful. Indeed, it is now recognised that dental plaque (and its constitutive elements) accounts for only 50 per cent of the risk for developing periodontitis and thus the other 50 per cent of modifying and predisposing factors must be taken into account when diagnosis and treating the periodontal diseases.

of oral health to overall health and general well-being was recognised by the US Surgeon General in a landmark publication titled “Oral Health in America.” This document for the very first time articulated the importance of oral health in an holistic approach to medical care. Despite the title, its content was relevant to the whole global scene. From this the concept of periodontal medicine gained further traction and its central hypothesis stated that periodontal infection and inflammation presents a significant chronic inflammatory burden at the systemic level. While there is considerable work still to be done significant progress has been achieved in the past decade. Diabetes is now well recognised to be a significant modifying risk factor for development of periodontitis and conversely periodontitis is considered to be a significant modifying or risk factor for glycaemic control in diabetes. Other functional state of regeneration is irrational. Nonetheless, as a profession, we have become obsessed with filling holes in bone rather than studying the natural healing processes required to regenerate the periodontal attachment apparatus. Ignorance of the contribution of the various tissue components in periodontal wound healing explained the widespread misuse of bone transplantation in the treatment of initial pockets which unfortunately still pervades some areas of periodontology.

It is now recognised that regenerative treatment of periodontal defects with an agent or procedure, requires that each functional stage of reconstruction be grounded in a biologically directed process. With such concepts in mind, the seminal studies of Karring, Nyman and coworkers from Gothenburg in Sweden led to the development of guided tissue regeneration (GTR) as a treatment modality. While this was a significant advance it became evident that while periodontal regeneration was biologically possible, it was clinically very difficult to achieve on a reliable basis owing to a vast range of patient and operator variables.

More recently we have seen the development of biological agents and preparations which, when applied onto root surfaces, can result in significant regeneration of damaged periodontal tissues. The use of such agents offers a simpler approach to periodontal regeneration with equivalent, and sometimes superior, results compared to GTR procedures. However, as has been noted for GTR, the clinical outcomes using biological agents can be variable and further work is needed to improve their clinical utility. Moreover, the use of mesenchymal stem cells and genetic modulation of periodontal cells have been explored for the purposes of achieving periodontal regeneration. The future looks promising but no doubt there is a considerable amount of work to be done before reliable and predictable periodontal regeneration becomes a reality.

Understanding that periodontal regeneration is biologically possible

Regeneration of damaged periodontal tissues as a result of periodontitis has been considered the ultimate goal of periodontal treatment. Over the decades many procedures have been advocated, mostly associated with root surface conditioning and implantation of bone substitutes into periodontal defects as a means of obtaining periodontal regeneration.

Unfortunately, these early concepts were naive owing to a poor understanding of the requirements for periodontal regeneration, namely the encouragement of new cementum, bone and periodontal ligament. Filling a periodontal defect with a substance which had no relevance to the next TRENDS & APPLICATIONS

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The TwinLight® approach to peri-implantitis

By Dr Ilay Maden & Dr Zafer Kazak, UK

As the number of dental implants being placed increases, reported cases of peri-implantitis are becoming more frequent. The available data suggest that one in five implant patients will develop peri-implantitis, an irreversible inflammatory condition characterised by bone loss around the site of an implant, while four in five will exhibit peri-implant mucositis, an early stage of the disease in which the inflammatory reaction is still reversible.

With peri-implant mucositis, the inflammation is limited to the peri-implant mucosa, while with peri-implantitis the infection also spreads to the peri-implant bone. Both conditions include the presence of bacterial plaque and calculus, oedema and redness of tissues, and involve bleeding on probing. In the majority of cases, classical treatment methods for peri-implantitis are inadequate due to a number of complicating factors, including resistant bacterial strains, difficult debridement procedures and the presence of biofilm on the implant surface.

The most prevalent reason for the development of peri-implantitis appears to be poor occlusal load distribution, with either primary contacts or cantilever bridges in implant-supported prostheses. Good oral hygiene on the patient’s part is mandatory, however, the position and design of prostheses that are difficult to manage may limit the effectiveness of mechanical cleaning. Once the underlying reason has been determined and recurrence is prevented, laser therapy can help to treat peri-implantitis.

The TwinLight® peri-implantitis treatment

A new laser treatment called TwinLight® from Fotona is proving to be one of the most effective methods for fighting peri-implantitis, successfully meeting the objectives of controlling infection by surface decontamination and halting the disease’s progression. TwinLight® is a minimally invasive technique combining dentistry’s two gold-standard laser wavelengths (Er:YAG and Nd:YAG) in a synergistic process designed to improve peri-implantitis treatment success rates and shorten healing time.

With TwinLight®, the Er:YAG laser is used in a non-surgical procedure to remove microbial composition and in a surgical procedure to treat the damaged alveolar bone around the implant. Using Er:YAG, it is possible to clean the granulation tissues, both on the bone and implant surfaces, and thoroughly decontaminate the site. Removal of granulation tissue from the alveolar bone and connective tissue with Er:YAG is highly effective. The erbium laser targets the water content to remove the granulation tissue selectively, due to its long pulse duration and lower peak power, while ablating the microorganisms on the surface of the bone.

The bactericidal effect of Er:YAG on the surgical site is effective against lipopolysaccharides, and the implant surface is completely cleaned without chemicals. The subsequent Nd:YAG treatment step promotes faster healing by bacterial reduction and biostimulation of the bone tissue. The same principles apply also with more severe treatments that require surgical therapy.

The TwinLight® procedure

The TwinLight® procedure is performed according to the following five steps:

- **Step 1:** Removal of the soft-granulation tissue with Er:YAG in LP mode (Fig. 1).
- **Step 2:** Removal of the bacterial biofilm on the implant surfaces with Er:YAG in LP mode (Fig. 2).
- **Step 3:** Ablation of the infected bone with Er:YAG in QSP mode (Fig. 3).
- **Step 4:** Bacterial reduction and biostimulation of the bone with Nd:YAG in MSP mode (Fig. 4).
- **Step 5:** Biostimulation with Nd:YAG in VLP mode (Fig. 5).

For treatment of peri-implant mucositis, only step 2 is performed.

Because the Er:YAG wavelength is used with an optimal modality, there is no danger of thermal damage to the highly fragile surrounding bone and no significant alterations of the implant surface, as is frequently the case with other lasers. The effect of the laser energy on the implant surface is dependent on the amount of energy density, power and pulse duration. The parameters should be chosen cautiously—lowering the settings may make the procedure slower but safer for re-osseointegration. Non-surgical use of Er:YAG is also possible if the problem is not extensive.

Clinical Case

In the accompanying clinical case, a removable prosthetic with two ball attachments was planned. Due to the patient’s request, the implants were immediately loaded, which most probably is the reason for the resorption...

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Fig. 1: Removal of the soft-granulation tissue with Er:YAG in LP mode.
Fig. 2: Removal of the bacterial biofilm on the implant surfaces with Er:YAG in LP mode.
Fig. 3: Ablation of the infected bone with Er:YAG in QSP mode.
Fig. 4: Biostimulation with Nd:YAG in MSP mode.
Fig. 5: Pre-op X-ray.
Fig. 6a: De-granulation and disinfection of the implant surface with Er:YAG laser.
Fig. 6b: Bacterial reduction and biostimulation of the bone with Nd:YAG laser.
Fig. 7: 3 years post-op X-ray.
seen around the implant on the right lower jaw (Fig. 5). The site was directly accessed to clean the granulation tissue and disinfect the implant surface with Er:YAG laser, while bacterial reduction and biostimulation were executed with Nd:YAG laser (Fig. 6). The defect was augmented with synthetic bone substitute.

After three years of follow up with very good healing (Fig. 7), the patient demanded a fixed prosthetic, which was delivered with an additional placement of implants in both jaws. X-rays taken 5 years after the peri-implantitis treatment can be seen in Fig. 8. Two more implants were placed distally when the patient could afford more treatments after one year.

There are a number of advantages of using lasers in this type of case. One of them is that there is no mechanical, chemical or any other means of trauma while removing the granulation tissue around the implant—neither to the implant nor to the bone tissue. In addition to being safe, both wavelengths are known to promote healing by bacterial reduction and biostimulation of the tissue. Shorter pulses are used on the surface of the implant to avoid thermal effects, but with lower energies, so as to not have a too high peak power and thereby damage the surface. With short pulses and higher peak power (higher energy), we can create bleeding spots on the bone to improve healing of the augmentation material.

The penetration of Nd:YAG through bone helps the achievement of bacterial reduction and biostimulation. Care should be taken to avoid contacting the implant surface with Nd:YAG because the absorption in titanium is high and could cause a rise in temperature. It is also important to use a fast, sweeping motion with high suction to avoid heat accumulation on one spot. Too much bleeding would block the penetration of the Nd:YAG laser. Nd:YAG can also be used on the incision line, vestibular, the oral side of the surgical site and extraorally after suturing, and every second day for faster and better healing, with less pain and swelling.

Editorial note: A list of references is available from the publisher.

Dr Ilay Maden is the co-director of Seesaw Dental Education Independent Dental Laser Courses, a UK-based affiliate of the Aachen Dental Laser Center in Germany. He can be contacted at ilaymaden@gmail.com.

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