This challenging part-time modular Diploma programme is ideally suited to any general dental practitioner or specialist wishing to develop their knowledge of implant dentistry and extend clinical skills whilst working toward a postgraduate university qualification.

The Diploma is a structured programme of didactic study and supervised clinical training, together with mentoring, and is delivered on 2 days a month over 3 years.

The programme will allow the graduate to achieve a straightforward level of competence as outlined by the GDC and will build a sound evidence-based knowledge of implant dentistry to include immediate placement, GBR techniques and immediate loading.

Programme Director: Dr Dev Patel
Programme Co-ordinator: Dr Alon Preiskel
Specialist Tutors: Dr Cyrus Nikkah, Dr Carl Manhem, Dr Pareet Shah
Specialist Faculty: Dr Colin Cook, Dr Ulpeep Darbar, Dr Andrew Dawood, Professor Nikolaos Donos, Dr Marco Esposito, Dr Mark Haswell, Professor Torsten Jemt, Dr Navdeep Kumar, Dr Basil Mizrahi, Dr Geoff St George, Dr Rishi Patel, Professor Derrick Setchell, Dr Richard Tucker, Professor Michael Wise

Teaching will include interactive lectures, seminars, hands-on procedures and live surgery as well as supervised clinical treatment.

Didactic aspects of the programme will be provided by an experienced multidisciplinary team of GDC registered specialists and will include invited international speakers.

During the programme, participants will compile a clinical portfolio and carry out written assignments, all of which contribute toward continuous assessment.

Those who successfully complete the Diploma may elect to further their studies to an advanced level to include complex procedures such as bone grafting and sinus lifts.

Closing date: Applications are encouraged by 27 May 2011. Please note that this is a limited attendance course and acceptance will be through competitive entry.

For further information, please contact:

Miss Nisha Gosai, Registry Officer
UCL Eastman Dental Institute
256 Gray's Inn Road
London WC1X 8LD
t: +44 (0)20 7915 1092
f: +44 (0)20 7915 1274
e: academic@eastman.ucl.ac.uk
w: www.eastman.ucl.ac.uk

Programme is approved by the Faculty of General Dental Practice (UK) for accreditation towards its Career Pathway.
Dear Reader,

Welcome to the first issue of the UK edition of Implants, we hope you find it interesting and informative!

The International Dental Show closed its doors on 26th March 2011. This exhibition, as many before, managed to triumph again as the international dental highlight. It gathered exhibitors and visitors from almost everywhere on the globe. Speaking of highlights - Implantology and CAD CAM technology are currently the record breakers with regards to the technology, instruments and materials involved. So, it is no surprise that more than 350 manufacturers made their way to this event of superlatives.

All together Implants is well positioned with patients, practitioners, lab technicians and of course the industry. Skills and knowledge compliment the surgeon’s and prosthodontists’ experience based on CONTINUING EDUCATION!

This journal is opening its doors to a different educational adventure... the CASE REPORT! Scientists and researchers are not very appreciative about this form of article despite the fact that almost every prestigious dental journal publishes case reports. In contrast, busy general dental practitioners value the input from this educational format as they can easily implement that in daily practice. Implants will close this gap and is welcoming your case report. You may ask now what are the particularities to make a case report successful?

Here is an outline:
1) Abstract - Describe the clinical question/problem to be addressed by the case; Present a short analysis of literature review; Summary
2) Medical/dental history - Description of case particularities; History of current problem; Intra - extraoral examination; Relevant X-ray, tests, etc; Initial diagnosis and treatment plan (alternatives need attention); Expected outcome (according to current standards); Outcome of the performed treatment
3) Literature search
4) Discussion - What was special about the case; Relevant literature; Treatment goal; Diagnostic process (explain diagnostic process, figures, photographs, etc. (include captions)); Expected treatment outcomes (explain and discuss actual result; Compare actual result to the literature; Discuss short-comings of achieved results)
5) What are the conclusions/recommendations?
6) References

Your Implants Journal welcomes your case report for the benefit of the profession.

Yours,

Dr. med. dent. Liviu Steier
Qualified Specialist in Prosthetics with Further Education of DGPro
Assoc. Clin. Professor
Specialist in Endodontics
Course director MSc in Endodontics
Warwick Dentistry - Warwick Medical School
An Evening with David A. Garber D.M.D.

At the Royal College of Physicians

Wednesday 25th May

Evolving Implant Aesthetics: Options… Alternatives… Solutions…

Lecture outline

• Virtual treatment planning for gingival outcomes.
• Surgical augmentation - What to use and when to use it.
• Hygiene and maintenance beyond aesthetics over the long-term.
• The adjacent implant dilemma.
• Submerged Root Alternative.

Venue:
The Royal College of Physicians
11 St Andrews Place, Regent's Park, London NW1 4LE

Date & time:
Wednesday 25th May, 2011
6pm - 7pm registration and refreshments
7pm - 9pm lecture (2 hours CPD)

Cost:
£30 (inc VAT). Please call BioHorizons to book your place (01344 752560)

Dr. David Garber has a dual appointment at the Medical College of Georgia School of Dentistry, in Augusta Georgia, as Clinical Professor in the Department of Periodontics, as well as Clinical Professor in the Department of Oral Rehabilitation. He lectures extensively on multi-disciplinary approaches to optimizing aesthetics.
An Evening with
David A. Garber
D.M.D.

At the Royal College of Physicians
Wednesday 25th May

Evolving Implant Aesthetics: Options... Alternatives... Solutions...

Venue:
The Royal College of Physicians
11 St Andrews Place, Regent’s Park,
London NW1 4LE

Date & time:
Wednesday 25th May, 2011
6pm - 7pm registration and refreshments
7pm - 9pm lecture (2 hours CPD)

Cost:
£30 (inc VAT). Please call BioHorizons
to book your place (01344 752560)

Dr. David Garber has a dual appointment at the Medical
College of Georgia School of Dentistry, in Augusta Georgia,
as Clinical Professor in the Department of Periodontics,
as well as Clinical Professor in the Department of Oral
Rehabilitation. He lectures extensively on multi-disciplinary
approaches to optimizing aesthetics.

Lecture outline
• Virtual treatment planning for gingival outcomes.
• Surgical augmentation - What to use and when to use it.
• Hygiene and maintenance beyond aesthetics over the long-term.
• The adjacent implant dilemma.
• Submerged Root Alternative.

To book your place please contact:
BioHorizons
Heather Wagstaff
tel. 01344 752560
or email
infouk@biohorizons.com
So, what do we know about implant dentistry?

Author _Lisa Townshend_

This April saw the Association of Dental Implantology UK Team Congress held in Manchester. With the theme of ‘What we know, what we think we know and what we think we don’t know about implant dentistry’, the event saw more than 650 delegates come together to hear world-class speakers discuss the latest topics within implant dentistry.

It was interesting to see the sector breakdown of delegates – whilst more than 50 per cent of the attendees were clinicians, there was an even spread across other registered and non-registered groups. The one exception being dental nurses, which seems to show the changing views of the importance of teamworking in dental practice, especially in the more complicated areas of dentistry. This of course was complimented by the extensive dental implant team programme which ran alongside the plenary session. The attendee breakdown is as follows:

- 356 clinicians – 53.5%
- 43 technicians – 6.5%
- 43 hygienists – 6.5%
- 167 nurses – 25%
- 48 practice managers – 7%
- 8 students – 1%

The speaker line-up itself was a global who’s who of implantology, with figures such as Tomas Albrektsson and Michel Magne taking to the podium. The team programme played host to names such as Ashley Latter, Louise Fletcher and Simon Wright, discussing topics ranging from team approaches in implant dentistry to medical emergencies, HTM01-05 to sinus lifts.

Plenary speakers included:

- Prof Tomas Albrektsson MD PhD ODhc: How learning from past errors can guide the future of dental implants
- Mr Michel Magne MDT BS: Aesthetic dentistry today - a distinctive approach to nature
- Prof Maurício Araújo DDS MSc PhD: Management of the alveolar socket
- Prof Clark M Stanford DDS PhD: Integrating the process predictable aesthetics into clinical practice
- Dr Stephen L Wheeler DDS: Immediate implant placement: is it safe and predictable?
- Prof Joseph Kan DDS MS: Implant papilla management in the aesthetic zone
- Mr Oliver Brix MDT: Oral Harmony: a systematic way to success
- Dr Stephen S Wallace DDS: Latest strategies and techniques for maxillary sinus augmentation
- Assoc Prof Tara Aghaloo DDS MD PhD: Bone grafts for site development – the past, the present and the future
- Prof Torsten Jent DDS Odont Dr/PhD: Long-term experience of dental implants – clinical development and biological response
The natural collagen structure of Geistlich Bio-Gide®

> provides high therapy safety
> leads to less dehiscence
> underlies the perfect aesthetic outcome

Covering the augmentation with Geistlich Bio-Gide®.
(PD Dr. R. Jung, University Zurich)

Excellent soft-tissue healing and a perfect aesthetic outcome.
(PD Dr. R. Jung, University Zurich)
Dental implant team programme speakers included:

- **Ms Anita H Daniels RDH**: The team approach to implant dentistry: a blueprint for success and The role of the dental hygienist in implant treatment
- **Mr Ashley Latter**: Ringing the changes: turn every patient enquiry into an appointment
- **Miss Helen McVicker**: Asepsis for dental implants: the theory and Asepsis for dental implants: the practical
- **Miss Louise Fletcher**: Effective communication with patients
- **Miss Helen Batty and Dr David Speechley BDS DMI RCS Edin PGDip Implant Dentistry**: Advanced surgical techniques, instruments and preparation
- **Miss Helen Frost, Miss Amy Miller and Dr Simon Wright BDS PGCTCP FHEA PGDip Implant Dentistry**: Medical emergencies in implant dentistry
- **Miss Helen Batty**: HTM01-05 and implant dentistry
- **Miss Kara Moody**: Sinus lifts

Sitting alongside the congress was an extensive exhibitor’s area, where delegates could discover the latest technologies on offer to make their implant dentistry easier and more predictable. With more than 500 implant systems available worldwide and with this number growing, delegates were finding it helpful to speak to the teams behind some of the systems available in the UK. Representatives of the largest implant companies in the UK were there, including Astra Tech, Biohorizons, Nobel Biocare and Straumann. Other emerging systems were also on show, including Bicon, d2d Implants, DIO Implants, Implantium and Southern Implants.

ADI’s stand was prominent in both size and busyness, with many of the organisation’s staff and officers on hand to help with queries and showcase the many services and benefits ADI can offer its members. The main highlight of the stand was the launch of the association’s new online education resource Ark.

Ark comprises 13 individual courses, each covering a core topic within implant dentistry and is designed to meet the complex educational needs of today’s learners. It has been designed to incorporate a flexible approach so that learners can access individual modules or the whole course, and can access the learning at their own time and preference of learning opportunities: online, directed reading, study days and experience-based learning through mentoring.

Speaking at the congress, ADI President Dr Stephen Jacobs was delighted at the success of the event: "This is turning out to be a fantastic event. The speakers have really kept to the remit of reflection within the subject of implant dentistry.

"There really isn’t a lot that’s new in implantology. Of course, with the advances in technology the accessibility for patients has improved as well as the predictability of the implant components.

"This year’s congress has been two years in the planning and I was delighted that every speaker we invited to take part was able to accept except one who could not make it."

Dr Jacobs was keen to stress the importance of mentoring when developing the skills needed as an implant clinician, both in terms of patient safety and the clinician’s own needs. "Mentoring can often be more stressful for the mentor! The relationship between mentor and mentee is extremely important; it needs to be right.

"In a field such as implant dentistry mentoring is a fundamental facet to becoming competent, a patient’s well-being is paramount when performing this kind of treatment and the clinician needs to have confidence in their skills. Mentoring helps give that confidence."

The congress was a vibrant and exciting event which delegates seem to thoroughly enjoy. Comments from attendees included:

The congress exceeded my expectations - wonderful accessible venue, superb audio visuals, world class speakers, friendly sociable delegates, excellent standard of catering. All in all, the best dental convention I have attended.

Outstanding - best ever in all respects.

A very professional and organised congress - excellent overall and excellent speakers.

The best ever done by ADI.

ADI President Elect, Professor Cemal Ucer will host the next ADI Team Congress in 2013 with the theme How long do implants last? Complications, risk management and prognosis. Save the date!_
“Once you’ve tried it, you can’t drink anything else”

Author: Dr. Jay B. Reznick

Way back in 2005, I was listening to a speaker discuss a new way of placing dental implants that would revolutionise the process. He showed a video of an elderly Swedish man strolling into a dental clinic with a bag full of ill-fitting dentures, and walking out later that same day with fully implant-supported final prostheses. The process used 3-D computed tomography (CT) imaging to plan the implant placement, and then a custom surgical guide was made that facilitated the flapless placement of a dozen or so implants so precisely that only minimal adjustments would be necessary to the prefabricated fixed bridges. The cost of this treatment was about US$100,000, rendering it beyond reach for the majority of patients.

This was an enlightening moment for me, as I saw the potential in this technique. As soon as it was available in the US and the cost became more reasonable, I vowed to bring this technology into my practice so that my patients could benefit from this amazing innovation.

Early in 2006, I flew to Chicago and took the Nobel Guide training course, and within a short time I had half a dozen cases under my belt. I was amazed by how quickly and accurately I could place multiple implants, and that most patients needed only a few post-operative ibuprofens and were back at work the next day. Soon thereafter, I acquired SimPlant software and began using both methods for treatment planning and placing implants.

These two pioneering systems opened the door for the current tidal wave of CT-guided implant surgeries. For those of you not familiar with the concept, CT-guided implant surgery uses 3-D CT imaging to evaluate the bony anatomy of the edentulous jaw, uses this for implant planning, and then accurately transfers the treatment plan to the patient at surgery using a custom surgical guide that controls the position, angle, and depth of each drill and implant fixture. It is so accurate that a custom provisional or even final prosthesis can be made that is delivered with minimal, if any, adjustment needed. It is a panacea for the restorative dentist because implant placement is completely prosthetically driven, not dictated by the surgeon’s whim if there are anatomical surprises when the tissue is flapped open. The anatomy is known with 3-D accuracy before surgery, and should bone or tissue augmentation be necessary to position the implants properly, this information is known ahead of time and additional procedures are planned. The result is perfectly placed implants in ideal bone that are straightforward to restore and function properly nearly all of the time.

Even though I did not use CT-guided surgery for every implant case, I probably completed a hundred cases or more in those first two years. It was a very time-consuming process. I had to have the laboratory make a radiographic template, arrange for the patient
case report: CT-guided implant surgery

To have a CT scan, have the scan redone should the technician not have followed the protocol exactly, import the DICOM files into the software program, clean up the scatter, treatment plan the implants, and then see the patient for a second consultation to review the treatment plan. Because of the significant time and effort required to complete a computerised treatment plan, I generally reserved this process for the more complicated cases or those for which accurate implant placement was critical. Most cases were done the ‘old-fashioned way’ during this period.

My next revelation came in 2007, when I first saw the GALILEOS cone-beam computed tomography (CBCT) scanner and started thinking about incorporating this into my practice. The beauty of it was not the scanner itself, as most CBCT scanners on the market render a good image; it was the software. GALAXIS and GALILEOS Implant were developed with the dentist in mind, as opposed to most other CT viewing and implant-planning programmes, which were modified from existing medical CT software. With very little instruction, I was able to navigate through the images and start planning implant surgery like an expert.

Sirona, the manufacturer of GALILEOS, hit a home run, in my opinion, when they considered the entire work flow in designing the software suite that was included with their machine. With the simple click of a tab, the same software programme used for viewing the scan diagnostically could quickly and easily be used for treatment planning implants, and then ordering a custom surgical guide.

Once I had brought GALILEOS into my office, life became easier. Now, as soon as my patient was scanned, using a radiographic template, the images could be brought up on the monitor, and then implant planning could begin immediately. What previously took at least 30 minutes of my time and two patient visits was now possible in less than five minutes in a single appointment. As a result, cases that I previously considered to be too simple to treat using CT-guided surgery techniques were now suitable candidates. Before I knew it, I was utilising this technology for practically every implant case. The only exception was a case in which a patient could not wait the seven working days that it currently takes to have the surgical guide manufactured. CT-guided implant surgery has the benefits of increased accuracy of implant placement through a smaller, minimally invasive incision. Another major benefit to the implant surgeon is decreased surgical time, which allows one to schedule more patients and more procedures in the day. Of course, this is of little benefit if treatment planning becomes very time-intensive. The beauty of the...
Adapting with nature

OsseoSpeed™ TX Profile – anatomically designed implants for sloped ridges

Imagine being able to achieve 360° bone preservation around the implant, even in cases with sloped ridges. Now you can.

With OsseoSpeed™ TX Profile – a uniquely shaped, patented implant, specifically designed for sloped ridge situations – you no longer have to choose between buccal and lingual marginal bone preservation and esthetics, you can have it all – 360° around the implant.

As with all Astra Tech implants, OsseoSpeed™ TX Profile is based on the documented key features and benefits of the Astra Tech BioManagement Complex™. Used in combination with patient-specific Atlantis™ abutments, you and your patients can look forward to long-term function and esthetics.

For more information, please visit www.astratechdental.co.uk
GALILEOS Implant/SiCAT system is in the integration of workflow that makes the implant planning phase rapid and effortless. An additional plus is improved inventory control. Instead of requiring a variety of implant sizes for a single case, the exact fixture diameter and length are predetermined, so only a single fixture has to be ordered per site.

We have traditionally relied on panoramic radiographs and study models to plan our implant placement. Surgical stents have always been used in implantology to aid in this process. The traditional surgical guide is made from a wax-up on a stone model that does not allow representation of the true bony anatomy of the underlying edentulous ridge nor the position of adjacent tooth roots. There are various styles of surgical guides that have been in use, ranging from thermoplastic sheets to solid acrylic replicas of the final prosthesis. These guides only estimate the position for the initial drill, leaving this up to the discretion of the surgeon, and do not control the depth of drilling. Sequential osteotomies are then generally drilled free hand. This introduces many opportunities for aberrant implant positioning. Even in the hands of the most experienced implant surgeons, up to 20 percent of implant placements vary from their intended position. Dentists need only look in their favourite implant textbook or journal to find examples of textbook cases that are less than perfect. And, I have never met a restorative dentist who has not had his or her share of similar experiences.

Often, these restorative challenges can be managed with custom abutments and other prosthetic tricks, which significantly increase the dentist’s laboratory bill and affect the profitability of the case. However, in some cases, the only solution is either to not restore the fixture or to remove it and start over. Anatomical variations also pose challenges, such as a high lingual mylohyoid concavity, a surprise pneumatized sinus, or a divergent root that came a little too close to the implant fixture. We do not like to have to deal with these complications, but even the best of us have faced them more than we like to admit.

Many of my surgical colleagues are of the opinion that CT-guided surgery is unnecessary because they have been placing implants for many years using the technique they learned 15 or more years ago. I completed my surgical training in 1990, and have done more implants than I can count since then. And for the most part, I have a very high success rate, with minimal problem cases of which to speak. But, am I perfect? Of course not. Are my colleagues any better? I don’t think so. I strongly believe that CT-guided techniques will become the standard of care for implantology within the next ten years, or sooner. Those clinicians reading this article have already demonstrated an understanding of what new technologies can do for the practice of dentistry. I’m sure that few of you who own dental CAD/CAM systems could imagine practicing without them and the benefits that this technology gives to your patients and your practice. The same holds true for CBCT and guided implant surgery.

In September 2009, I was honoured to be the surgeon for the introduction and first live demonstration of the integration of GALILEOS CBCT data with that from a CEREC digital impression and prosthetic proposal. CEREC uses surface-scanning technology to capture a digital impression of the hard and soft tissues around an area where a dental implant is being considered. GALILEOS uses a radiographic source and sensor to image the bony anatomy in the area of interest. The multiple views are then processed by a computer to create a 3-D image of the teeth and bone,
which can be viewed in an infinite number of cross-sectional cuts. Both types of images are nothing more than a set of digital data translated into an image that can be viewed on a monitor. Merging these two sets of numbers appears to be a simple process. However, I am not a software engineer; I am just a dentist. Luckily for us, there are some smart people at siCAT, Sirona’s software subsidiary in Germany, whose mandate was to do just that. Their efforts have changed implant dentistry forever. With the integration of CEREC and GALILEOS, we now have the opportunity to practise real digital implantology. The restoration of a patient’s missing dentition can be treatment planned in virtual reality, without the need for physical impressions, pour-up study models or wax-up prostheses. The ability to visualise the patient’s bony- and soft-tissue anatomy in relationship to the proposed prosthesis is a tremendous advantage in attempting to follow the principles of prosthetically driven implant dentistry. This facilitates restoration, optimises functional forces on the implant fixture, and improves long-term implant success.

Another benefit of CT-guided implant surgery is the ability to perform the procedure through a minimal incision. This is possible because the underlying 3-D bony anatomy is known preoperatively. Also, since the surgical guide directs the position, angulation and depth of each drill, the surgical time is significantly reduced. This translates to an easier post-operative course for the patient. Because the implant is placed in the ideal position, functional loads on the implant fixture are more ideal. This helps maintain optimal peri-implant bone levels and reduces the failure rate. The resulting time saved can be used by the surgeon to schedule another consultation, surgery, or recreational activity.

The following cases demonstrate the types of implant treatment plans that can be treated using 3-D CT-guided surgical techniques through the integration of GALILEOS and CEREC.

Case 1

This first patient was a 70-year-old woman with a failing maxillary left lateral incisor. The tooth had been treated endodontically many years before and had a post-retained fixed prosthesis that was subject to repeated failures (Fig. 1). The tooth was not restorable and a decision was made to remove the tooth and replace it with an immediately placed dental implant and provisional prosthesis (Fig. 2). The patient understood and agreed that the immediate implant and prosthesis would not be placed in function for three months after placement.

A stone study model was made, and the crown of tooth #10 was removed. This modified model was captured by CEREC in order to create a digital model that represented the site after tooth extraction. The opposing dentition was captured in a Futar D (Kettenbach) bite registration and the prosthetic proposal was created in CEREC (Fig. 3). The digital model and prosthetic proposal were then imported into GALILEOS. The ideal implant size and position were determined within the GALILEOS scan, based on the bony anatomy data, as well as the mucosal surface and prosthetic data from CEREC (Fig. 4). The treatment planning data, along with the stone model and a special scanning template were sent to siCAT, and a custom surgical template was returned.

This template was used in surgery once the tooth had been atraumatically extracted in order to direct the placement of the implant fixture into the site of tooth #10. The position, angulation, and depth of implant placement were all controlled by the guide, so that the implant was placed exactly where it had been planned...
Case II

This second case illustrates the tremendous power of the integration of GALILEOS and CEREC for treating the partially edentulous patient. This patient was a 62-year-old man with moderate bone loss due to smoking. He was otherwise healthy. He was missing teeth #2 to 5 and 15, and had undergone bilateral sinus-lift surgery to augment the bony deficiency in the posterior maxilla (Fig. 11). In preparation for implant placement, a GALILEOS CBCT scan was performed with a siCAT scanning template. A full-arch digital impression was acquired with the CEREC AC unit, and then prosthetic proposals were designed for teeth #2 to 5 and 15. This data was then imported into GALILEOS for implant planning (Figs. 12 & 13). The position of the implants was verified (Fig. 14) and the surgical guide was ordered from siCAT (Fig. 15). This was used to place four Astra Tech dental implants accurately using the Facilitate Surgical Guide (Astra Tech). Post-operative radiographs demonstrated that all four implants were accurately placed and in accordance with the treatment plan (Figs. 16 & 17). The patient had an uneventful post-operative course.

One of my favourite cocktails is the Vesper Martini, which was introduced to the world in the novel *Casino Royale* when James Bond asked the bartender to mix him this variation on his standard drink. Bond named the drink after Vesper Lynd, his love interest in the story because, he confessed, as with her, once you’ve tasted it, that’s all you want to drink. CT-guided implant surgery is no different for me. After years of planning and placing dental implants the old-fashioned way I learned in residency, I was given a taste of a new way to do so. It was a radical change at first, but once I knew the recipe, I realised that it was a faster, better and more accurate way to treat my patients. Now, I can’t drink anything else. Hopefully, you will give it a taste and agree.
Providing your patients with predictable in-office treatment planning and surgical success just got easier with the GXCB-500™ powered by i-CAT®. Perfect for implantology, the GXCB-500 captures vital anatomical structures to virtually eliminate the risk of undetected nerve canals or deteriorated bone structure.

Plus, the GXCB-500 provides complete three dimensional imaging and easily switches to 2-D panoramic projections with the same sensor. All with exceptional scan and reconstruction times.

New dimensions of diagnostic capability with remarkable affordability... only from Gendex.

Visit www.GXCB500.com to learn more.

Experience the new GXCB-500 — the latest in cone beam 3-D imaging technology.

- Standard Scan Mode — 8 cm by 8 cm
- Extended Diameter Scan (EDS) Mode — 14 cm by 8 cm

Cone Beam 3-D Imaging Systems
- Panoramic X-ray Systems
- Intraoral X-ray Systems
- Digital Intraoral Sensors
- Digital X-ray Phosphor Plates
- Intraoral Cameras
- Imaging Software
The treatment of toothless jaws—A case for CAD/CAM

Author: Dr Sven Rinke

Prosthetic devices can be fitted in various ways. Digital technologies have left their mark in implantology and provide options for high quality solutions. Classical indications for implant-prosthetic treatments include dentures for the toothless jaw. For this type of denture, clinical studies document a high survival rate of about 85 to 90 per cent with observation periods of up to 20 years.1,2

Various prosthetic concepts have established themselves for the fitting of superstructures according to the number of inserted implants.3 Generally, there is either a fixed denture mounted on six to eight implants and borne by these only, or a removable denture with a reduced number of implants.

The selection of a suitable denture depends on subjective criteria (patient expectations, financial constraints) and on clinical aspects (anatomic criteria, technical and clinical reliability of implants and superstructure). Accordingly, the success of the prostheses depends on the following factors (Fig. 1):

- **Subjective criteria (patient satisfaction and quality of life);**
- **Objective criteria (probability of survival);**
- **Necessary maintenance effort during the lifetime of the denture.**

Hence, the insertion of two to four implants can lead to a clear improvement of quality of life. Therefore, the removable implant-supported and implant-retained cover denture prosthesis is nowadays considered an effective therapy.

However, there was also evidence that, in particular, the choice of fitting elements in a removable denture, for example magnets, ball-heads, bridges and telescopes, has an influence on patient satisfaction. With respect to stability and retention power, as well as achievable patient satisfaction, a comparative cross-over study demonstrated that magnets are inferior to the fitting with ball-heads.6,7 A comparison of ball head elements and overdenture attachments used for the fitting of an implant-retained cover denture prosthesis did not demonstrate any differences with regard to patient satisfaction.8 However, there proved to be a significant difference in the rate of technical complications.

Within an observation period of three years, prostheses fitted with ball-heads required 6.7 repairs, whereas the group of bridge-fitted prostheses required 0.8 repairs per patient only. Hence, overdenture attachments as fitting elements for removable superstructures guarantee high patient satisfaction. Owing to their low rate of technical complications, they require less maintenance than alternative fitting elements,6,8 which is an important criterion for the long-term success of the prosthesis.

High maintenance requirements demand more practice visits and take the time of both the patient and the care provider. Furthermore, if there are technical complications that have led to the failure of superstructure elements, an intervention by a dental technician might be necessary to reconstruct or replace individual components. This is also connected with additional costs in order to maintain function.
When evaluating overdenture attachment constructions as fitting means, the various types and forms available must be considered. On the one hand, there are individually shaped bar attachments, and on the other hand, there is the classic round bar, which can be manufactured either by casting or by combination of pre-fabricated elements.

The overdenture attachment fitted on four implants is a classic fitting element for a purely implant-supported cover denture prosthesis in a toothless upper or lower jaw. A retrospective study with 51 patients compared individually shaped bar attachments and round bars for the fitting of cover denture prostheses. Twenty-six patients were equipped with round bars, while 25 patients received a superstructure with an individual bar attachment on four implants each. After a surveillance period of five years, the survival rate of the implants was 100 per cent. Larger technical complications that required a renewal of the mounting elements occurred in the round bars only in the form of fractures in the extension areas. The fractures on the extensions of the overdenture attachments, which were exposed to high mechanical stress, were due either to porosities in the cast object or to inhomogeneities in the area of the points of attachment. Furthermore, it was determined that low-grade complications (activation of hanks) occurred three times as often in the round bars as in the bar attachments. Thus, two causes of defects can be deduced: firstly, defects due to faults in the manufacturing technique (casting and joining processes); and secondly, defects causatively connected with the design of the superstructure.

Two versions are described in the literature for the fitting of attachments in the toothless upper jaw: the fitting of attachments on four implants in the anterior segment and the fitting of two attachments on three to four implants on the lateral segments (mostly after a previous sinus floor augmentation). Additionally, for the application of attachments in the toothless upper jaw, data from clinical studies has been published. Both attachment concepts featured almost identical survival rates after five years: 98.4 per cent for the attachments in the anterior segment and 97.4 per cent for the attachments fitted on six to eight implants in the lateral segments of the upper jaw.

In particular, fitting by bar attachments appears to be a therapeutic means with guaranteed success of the fitting of purely implant-supported cover denture prostheses in the upper and lower jaw. It excels with a low rate of technical complications, as well as low maintenance requirements. Hence, bar attachments constitute clinically tested fitting elements for implant-retained and implant-fitted removable superstructures in the toothless upper and lower jaws. No clinical data for the fitting of removable superstructures in the toothless upper jaw for magnets and for ball-head attachments is available. Additionally, the application of so-called locators for the fitting of removable implant superstructures cannot be considered to be based on evidence, according to the currently available data. To date, no results of clinical studies have been presented for this fitting element.

Telescopes as fitting elements for removable superstructures are popular particularly in the German-speaking countries, as they are very hygienic and easy to expand. However, these advantages are offset by the high technical requirements and costs. Clinical studies on the suitability of double crowns as fitting elements in implant prostheses demonstrate that they are generally suitable and they point out the advantage of combining the natural teeth with implants for the fitting of a removable construction, as opposed to attachments.
Despite the high and well-documented survival rates of attachment constructions, the question arises as to whether the strategies can be further optimised in order to avoid defects attributable to the technique. The traditional way of manufacturing attachment constructions is by casting. However, the larger the cast object, the more difficulties arise in terms of porosity and warpage, which increase the risk of mechanical failure and impair the proper fit (Fig. 2).10

Relatively early on, the well-known casting problems led to the establishment of alternative techniques. The application of prefabricated implant components, which were then joined by means of soldering or laser welding, was one way to improve the fit. However, with large constructions in particular, this procedure has the disadvantage of very time-consuming manual post-processing. Furthermore, there is the risk that the mechanical ability to cope with pressure may be reduced in the area of the joining point.

From an economical point of view, it would make sense to use largely bio-compatible material of sufficient mechanical strength for manufacture, such as pure titanium or a Co-Cr alloy. However, the processing of such alternative materials does not provide a sufficiently exact fit with the current casting techniques. In vitro examinations of cast implant superstructures made of non-metallic materials showed gaps of 200 to 300 μm between the superstructure and the implant arrangement.11 Compared to this, cast structures made of noble metals featured median gap widths of 40 to 50 μm.12 The use of alternative materials therefore requires an alternative processing technology in order to achieve the necessary precision. In the ideal case, the superstructure is cut from a prefabricated solid material in order to safely exclude inhomogeneities.

With this in mind, the manufacture of superstructures with cutting technological means utilising the computerised numerical control (CNC) process began more than ten years ago. In vitro examinations using this CAM technology demonstrated that the precision achievable in such constructions, with median gap widths between 20 and 30 μm, is better than the accuracy of fit achieved with cast frames made of noble metals.12 Modern scanning and software technology allows expansion of this manufacturing principle to virtual construction. Hence, the already well known process of CNC cutting is supplemented with the option of a purely virtual construction. Several manufacturers offer this technology, for example Compartis ISUS (DeguDent).

Case presentation

The manufacturing process of an attachment utilising the Compartis ISUS system is documented below. After exposure of the implants, the next appointment was devoted, as usual, to making a casting with impression material that has a high final hardness and hence guarantees a secure fixing of the casting posts (for example, Impregum, 3M ESPE; Monopren transfer, Kettenbach Dental; Fig. 3).

In the ideal case, the casting appointment would entail the determination of the jaw relations and a casting for the model of the opposing jaw. After that, the work model is manufactured with the help of a removable gingiva mask in the area of the implants. When the first check-bite is taken, a first provisional model can be mounted immediately. Based on this working material, a tooth arrangement is prepared from plastic. It is useful if the information about the colour and the shapes of the teeth is already available during this work step (Fig. 4).

The tooth arrangement can be tried on at the next appointment and corrected if needed. The exact jaw relations can thus be determined and sufficient information will be collected for the definitive tooth arrangement. At this appointment, the precision of the casting should also be checked with a transfer jig. For this jig, the posts on the work model can be blocked with plastic and a metal reinforcement.

The jig must then fit onto the implants in the mouth without causing tension or shifting around. For the exact determination of the accuracy of the casting fit, it is advisable to perform the Sheffield Test. A screw is mounted and fastened on the post on one side of the
distal implant. When fastening the screw, the transfer jig must not lift off the other implants. Furthermore, there must not be any gaps. If the screw can be fastened without making the transfer jig move, it can be concluded that the impression has exactly copied the situation in the mouth. In case of a negative result, a transfer defect can be assumed. In this case, the transfer jig should be separated and all posts should be fastened with screws so that a new impression casting can be taken.

Once an exact impression has been secured and the tooth arrangement has been adjusted, the CAD/CAM manufacture of the superstructure can begin. First, the work model and the tooth arrangement are sent to a Compartis ISUS Planning Centre. There, the virtual construction of the attachment is made according to the specifications of the dentist(s) and dental technician(s). In the present case, a bar attachment construction made of titanium with distal attachments (Preci-Vertix, CEKA) was chosen.

The tooth arrangement determines the space available for the superstructure and alignment towards the chewing area. This information then constitutes the foundation for CAD of the superstructure, the CAD process. For this purpose, special scan posts are initially screwed onto the implants, in order to determine the position of the implants with a first scan. Then, a second scan is done with the wax arrangement, in order to determine the available space and the orientation of the superstructure. Thereafter, the desired superstructure is designed with the help of special software. This constitutes the basis for the manufacture of the superstructure utilising the CNC process (Fig. 5).

Dental technicians and care providers will then receive the construction suggestion of the Compartis ISUS Planning Centre by e-mail with a request for release or for advice regarding changes. As soon as the release is obtained, the manufacture of the attachment begins. The Compartis ISUS system uses modern cutting machines and special cutting strategies and ensures perfect quality of the surfaces, rendering manual post-processing dispensable (Fig. 6).

The dental laboratory can now commence with the fabrication of the secondary construction. In the present case, a secondary structure was initially made by means of electroplating (Solaris, DeguDent) and the plastic matrix for the Preci-Vertix retaining elements was incorporated. Thereafter, a cast tertiary structure was made of a Co-Cr alloy and bonded with the galvano-plastic structure. The superstructure was completed using the existing tooth arrangement (Fig. 7). Several in vitro examinations have proven the excellent accuracy of fit in these CAD/CAM-manufactured constructions (Fig. 8). In a comparison of five different techniques for the manufacture of implant superstructures, the CAD/CAM structures demonstrated a median accuracy of fit of 25 μm, while cast structures had median gap widths of 78 μm.13

However, the advantage of the CAD/CAM technology is not only the highly precise manufacture of superstructures made of pure titanium and Co-Cr alloys, but also its applicability to a broad range of indications. Starting from the scan data, virtual construction allows for a wide range of variations in terms of various forms of superstructures, from the simple round bar to retaining element attachments or to a bridge frame for fixed constructions. With a CAD/CAM system, it is also possible to virtually incorporate active holding elements such as extra-coronal retaining joints, bars and press buttons.

In summary, it can be said that CAD/CAM technology is also ideal for the processing of alternative materials on titanium and non-precious metal basis. It provides the following advantages:

- high mechanical resilience due to homogeneous pore-free materials;
- tension-free fit due to precise CNC-manufacturing technology; and
- suitability for a large width of indications due to individual CAD.

The integration of virtual design supplements the trusted manufacturing technology based on cutting and hence opens up possibilities for new indications for alternative materials in implant prosthodontics.

Editorial note: A complete list of references is available from the publisher.
Gus (Fig. 1) is an eminent and highly accomplished city architect with a great sense of style, creativity and aesthetics. He also has a phobia of all things dental. We met a few years ago when he turned up on my doorstep with his partial acrylic upper denture in pieces and asked if it could be repaired? I suggested that he needed to see a dentist but he was adamant that he would not and asked if I would repair it as he had an important meeting to go to. I succumbed, repaired it and he was very grateful and happy.

Six months later he was back with charm and a promise that if I repaired it he would go and see a dentist.

The following year he was back with three remaining upper teeth blowing in the breeze and yet again his denture in pieces. This time I stood firm and insisted he let me arrange an appointment with one of my clients. With some persuasion, not least because he was unable to function dentally with resulting weight loss, he reluctantly acquiesced.

An alginate impression put paid to one of the remaining teeth and the last two soon followed.

_Treatment_

**Stage 1**

**Preparation and implant placement:**

An alginate pick up impression was taken of the repaired denture (Fig. 2a). The last three teeth were added. The denture was tidied up as best it could be used during the initial stages of treatment (Fig. 2b).

Seven implants (NobelBiocare - Branemark) were placed (Fig. 3a) and a fixture head impression taken. Healing caps were then screwed on and the denture relined with a soft conditioning liner and fitted (Fig. 3b).
Stage 2
Temporisation:

The fixture head impression was poured and a resin (Pattern resin LS - GC) framework fabricated on six of the fixtures using temporary cylinders (Fig. 4).

Teeth (Heraeus Premium - Heraeus Kulzer) were set onto the framework for a tooth tryin (Figs. 5a-b). The set up was tried in and the tooth arrangement was customised to Gus’s satisfaction (Fig. 6).

Back on the model, indices (Lab Putty - Coltene Whaledent) were fabricated of the tooth position from the tryin. The indices were used as a guide for the fabrication of the definitive teeth.

The tryin was then processed in autopolymerising resin (Palapress - Heraeus Kulzer) (Fig. 7a) and used as a fixed temporary to replace the denture (Fig. 7b) and to load the fixtures (Fig. 7c).

Stage 3
Definitive restoration:

Definitive, cast to, gold copings with plastic chimneys were screwed in to the implant replicas on the master cast (Fig. 8a). A castable resin framework was then constructed to the copings (Pattern Resin LS - GC) (Fig. 8b).

Using indices taken of the trial set up a full contour wax up was poured to the framework (Fig 8c). A beam framework with individual tooth preparations was fabricated by cutting back the wax up (Fig 9a). This was sprued (Fig 9b), invested and cast in a beam gold alloy (Bio Degulor M - Degudent).

The cast framework was checked back on the master cast (Fig 10a) and then tried in the mouth to confirm fit (Fig 10b).

The metalwork with its tooth preparations was refined (Fig. 11a), sprayed with a photosensitive powder (Fig 11b) and then digitally scanned (Cerec In EOS - Sirona) (Fig. 11c). Virtual images captured by the scanner were used to design the copings to be milled in Zirconia (Figs. 12a-c). Zirconia copings were milled (Cerec in LAB - Sirona) (Figs. 13a-f) and sintered overnight (ZYrcomat - Vita) Fig. 14a-b). Once trimmed and heat treated ceramic (VM9 - Vita) was applied to the individual copings (Figs. 15a-e).

Except where screw holes are located under the crowns the rest of the crowns were definitively cemented to the framework (Panavia – Kurarary Co.) (Fig. 16). The removable teeth were then seated and the gingiva waxed up (Fig. 17). After the access teeth were
Overcoming opposites.

Honigum – Made by DMG.

Honigum Professional precision, now available as putty as well!

Honigum-Putty from DMG is the new kneadable VPS precision impression material in the user-friendly 450 ml can. Its DMG-developed Snap-Set technology facilitates a so far unrivaled combination of comfortable working time and short time in the mouth.

Honigum-Putty is the ideal partner for Honigum-Light which received the best clinical ratings* of all tested VPS by the noted test institute »The Dental Advisor«, not least thanks to its DMG-patented rheologically active matrix. For precise and detailed impressions Honigum-Putty also offers excellent recovery characteristics after deformation.

DMG. A smile ahead.

Additional information is available at www.dmg-dental.com

Fig. 7a

Fig. 7b

Fig. 7c

Fig. 8a

Fig. 8b

Fig. 8c

Fig. 8d

Fig. 9a

Fig. 9b

Fig. 9c

Fig. 9d
Honigum

Professional precision, now available as putty as well!

Honigum-Putty from DMG is the new kneadable VPS precision impression material in the user-friendly 450 ml can. Its DMG-developed Snap-Set technology facilitates a so far unrivaled combination of comfortable working time and short time in the mouth.

Honigum-Putty is the ideal partner for Honigum-Light which received the best clinical ratings* of all tested VPS by the noted test institute »The Dental Advisor«, not least thanks to its DMG-patented rheologically active matrix. For precise and detailed impressions Honigum-Putty also offers excellent recovery characteristics after deformation.

DMG. A smile ahead.

* The Dental Advisor, Vol. 23, No. 3, p. 2-5

Additional information is available at www.dmg-dental.com
Mini Dental Implant One Day Course
Presented by Todd E. Shatkin, DDS

This course covers the following subjects:

• Mini Dental Implant Treatment Planning, Case Selection and Placement Procedure
• Marketing Mini Implants in Your Practice
• One Visit Denture Stabilization Procedure
• Lab Fabricated Finished Single Tooth & Multiple Tooth Replacements

Accomplished in Less than an Hour.

(F.I.R.S.T.® Technique)

Course fee:

Dentists: £350
Staff: £150

Forthcoming date and venues

Vega Dental (CI) Ltd
Robin Rock, Le Petit Val, Alderney GY9 3US
Tel: 01481 824302        Mobile: 07781 440531
Email: info@vegadental.com        Web: www.vegadental.com

Saturday 20th August 2011
Heathrow Holiday Inn, London
Room reservations Reena Sherchan:
+44 (0)20 8990 0111 or email reenasherchan@holidayinnheathrow.co.uk

Monday 22nd August 2011
Hyatt, Birmingham
Room reservations Rebecca Lamb:
+44 (0)121 6431234 or email rebecca.lamb@hyatt.com

Denture Stabilization Procedures in One HOUR!

Dr Todd E Shatkin

We don’t only supply Mini Dental Implants
We do the whole caboodle!

• We supply the only Ossean™ coated Mini Dental Implants - Intra-Lock™
• We supply the patented Shatkin F.I.R.S.T. Technique to fit implants stress free
• We are the only Shatkin F.I.R.S.T. authorised laboratory in the UK and Republic of Ireland

• Dentist sends the impression, the x-ray with the completed lab slip to our Diagnostic Centre. Ten days later the dentists receives the completed case to include the crown(s) with the correct implant(s) and instructions for placement in one appointment.

• We help your Practice through our Referral Program as a Mini Dental Implant Supplier

Course Worth 7 CPD Credits

Authorised Distributor of implants

Fig. 10a
Fig. 10b
Fig. 11a
Fig. 11b
Fig. 11c
Fig. 12a
Fig. 12b
Fig. 12c
We don’t only supply
Mini Dental Implants
We do the whole caboodle!

- We supply the only Ossean™ coated Mini Dental Implants - Intra-Lock™
- We supply the patented Shatkin F.I.R.S.T. Technique to fit implants stress free
- We are the only Shatkin F.I.R.S.T. authorised laboratory in the UK and Republic of Ireland
- Dentist sends the impression, the x-ray with the completed lab slip to our Diagnostic Centre. Ten days later the dentists receives the completed case to include the crown(s) with the correct implant(s) and instructions for placement in one appointment.
- We help your Practice through our Referral Program as a Mini Dental Implant Supplier

**Mini Dental Implant One Day Course**
*Presented by Todd E. Shatkin, DDS*

**This course covers the following subjects:**
- Mini Dental Implant Treatment Planning, Case Selection and Placement Procedure
- Marketing Mini Implants in Your Practice
- One Visit Denture Stabilization Procedure
- Lab Fabricated Finished Single Tooth & Multiple Tooth Replacements Accomplished in Less than an Hour. *(F.I.R.S.T.® Technique)*

**Course fee:**
- **Dentists:** £350
- **Staff:** £150

---

**Forthcoming date and venues**

**Saturday 20th August 2011**
Heathrow Holiday Inn, London
*Room reservations Reena Sherchan: +44 (0)20 8990 0111 or email reenasherchan@holidayinnheathrow.co.uk*

**Monday 22nd August 2011**
Hyatt, Birmingham
*Room reservations Rebecca Lamb: +44 (0)121 6431234 or email rebecca.lamb@hyatt.com*

---

Vega Dental (CI) Ltd
Robin Rock, Le Petit Val, Alderney GY9 3US
Tel: 01481 824302  Mobile: 07781 440531
Email: info@vegadental.com  Web: www.vegadental.com
again removed, a putty mould was made of the gingiva, the wax boiled off, the metal opaqued with a pink, light-cured opaque composite) (Figs. 18a-c), the mould reseated and the gingiva poured in an autopolymerising resin (Palapress - Heraeus Kulzer) (Figs. 19a-c). Trimmed and polished it was ready for fitting (Figs. 20a-d).

Stage 4
Fitting the restoration:

The temporary restoration was unscrewed and removed and the definitive screwed into place and torque tightened (Figs. 21a-b).

Lastly the remaining crowns were cemented over the screw access holes using a temporary cement to facilitate removal for access at future times (Fig. 22).

Summary

After many years of neglect with resulting periodic tooth loss until only three unsalvageable teeth remained in the maxillary jaw, our city architect was finally restored to full dental health and function with an aesthetic appearance which is much to his delight (Figs. 23a–b).

Health is maintained with the assistance of superfloss and a Waterpik. The screw-retained structure is periodically removed for more extensive hygiene maintenance.

Steaks are back on the menu and a fuller physique regained.
With the 20:1 contra-angle of the Chiropro L system, you’ll rediscover the meaning of the word ergonomics. This Swiss Made instrument has an internal irrigation system unique to Bien-Air, which leaves the handling area completely free. The irrigant is directed at the base of the drill, running along it precisely. It offers perfect irrigation, especially for fitting implants using surgical guides. With the smallest head on the market and a very light weight, this instrument is as easy to handle as it is precise. Its LED lighting with two glass rods diffuses a natural white light and its power can be adjusted to suit your requirements. With so much comfort, you could almost forget that the 20:1 contra-angle of the Chiropro L is driven by the most powerful micromotor in the world, the extraordinary MX-LED.

CHIROPRO L – increase your expectations
Anthony Laurie lectures extensively, both internationally and in the UK, and is the author of numerous publications. He is the Managing Director of ‘DentAL Excellence’ at No.1 Bow Lane, London EC4 9EE, and Principal of DENTS. Anthony trained at the Eastman Dental Hospital and is highly qualified, with over 30 years experience in dental technology. He is one of only three people in the UK to have been conferred Fellowship of the City and Guilds for Dentistry and is also a Fellow of the British Institute of Dental and Surgical Technicians. He is the immediate past President of The British Academy of Aesthetic Dentistry (BAAD), a recipient of the prestigious Dennison Award (2006) and was UK Technician of the Year 2003. His training facility offers continuing postgraduate education for both clinicians and technicians and is registered as a school with the department for innovation, Universities & Skills (DIUS).
Dental aesthetics has now become a key issue in implant dentistry. This importance of dental aesthetics means that the quality and quantity of the soft-tissue surrounding the implant, is as important as the final restoration.

The bone volume of an implant site, both implants buccolingually and apicocoronally, can affect the implant’s final position and thus the aesthetics final restoration. It is suggested, especially in the aesthetic zone, that the minimum amount of buccal bone should be at least two mm from the implant shoulder. Deficiencies in bone and tissue volume often require augmentation, such as guided bone regeneration (GBR). This technique can increase the buccal bone volume, to at least two-three mm, so long lasting support for the buccal tissues is achieved.

It is also possible to improve the appearance of soft tissue by placing a soft tissue graft simultaneously with GBR. Patients who have a thin biotype can be modified to a thicker biotype by placing a connective tissue graft under the buccal flap. Harvesting a connective tissue graft from the palate can be difficult due to the large number of factors involved: the shape of the palatal vault; position of the palatal artery; the amount of connective tissue needed for the primary site; and the amount of adipose tissue on the graft. Connective tissue grafts also involve two surgical sites for the patient, doubling the possibility of poor healing.

AlloDerm is used as an alternative to connective tissue grafts, it eliminates the need for a second surgical site. AlloDerm is an acellular dermal matrix allograft; a product that was originally used in burns surgery. It is highly processed de-epithelialised human skin dermal allograft composed of a basement membrane and an extracellular matrix with collagen bundles and elastin fibres. AlloDerm...
was initially used in periodontics for gingival root coverage, augmentation of attached gingiva and ridge augmentation.

CASE 1: Increasing the amount of keratinised tissue around an implant site

A 45-year-old patient wanted to replace the LL6 site with a dental implant. On examination, it was noted that there was sufficient bone height and width for the placement of a Bio-horizons Tapered Internal Laser-Lok 3.8mm diameter by 10.5mm.

Placing AlloDerm into the site to increase the amount of keratinised tissue around the future implant.
The Laser-Lok implant was uncovered at 10 weeks and a healing abutment placed. At 12 weeks, the gingival tissues around the implant have increased in volume (Fig. 2). Fixture head impressions were taken at 12 weeks and the final abutment (Fig. 3) and definitive crown were fitted two weeks later (Fig. 4).

**CASE 2: Increasing the amount of gingival volume in the aesthetic zone**

A 40-year-old patient presented with a fractured post crown UR1. The UR1 root was extracted atraumatically and left for a period of eight weeks, for the soft tissue to heal, before a dental implant was placed (Fig. 5).

**Fig. 11 and 12:**
- Fig. 11: Alloderm the connective tissue side up
- Fig. 12: Alloderm sutured to the buccal flap

**Fig. 13a and 13b:**
- Fig. 13a: UR1 at three months buccal view
- Fig. 13b: UR1 at three months incisal view
### Dental Webinars

**Be Wherever You Want**

Let the Seminar Come to You...

<table>
<thead>
<tr>
<th>Webinar 1:</th>
<th>Essential Periodontology: a practical approach</th>
</tr>
</thead>
<tbody>
<tr>
<td>Speaker:</td>
<td>Dr Wendy Turner</td>
</tr>
<tr>
<td>Date:</td>
<td>23rd May 2011</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Webinar 2:</th>
<th>Periodontics: An update for the general practitioner</th>
</tr>
</thead>
<tbody>
<tr>
<td>Speaker:</td>
<td>Dr Amit Patel</td>
</tr>
<tr>
<td>Date:</td>
<td>31st May 2011</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Webinar 3:</th>
<th>Dental Implant treatment planning and Implant maintenance for the general practitioner</th>
</tr>
</thead>
<tbody>
<tr>
<td>Speaker:</td>
<td>Dr Amit Patel</td>
</tr>
<tr>
<td>Date:</td>
<td>7th June 2011</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Webinar 4:</th>
<th>Restoring Dental Implants made easy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Speaker:</td>
<td>Dr Stuart Jacobs</td>
</tr>
<tr>
<td>Date:</td>
<td>16th June 2011</td>
</tr>
</tbody>
</table>

Engage with a leading expert, ask questions, get solutions.

Relax in the comfort of your own home and keep up to date through interacting with the world’s leading thinkers.

To book your **free** place go to:

[www.dentalwebinars.co.uk](http://www.dentalwebinars.co.uk) or email info@smile-on.com
A three-sided flap was raised, with facial line angle relieving incisions, to allow for sufficient access to the future implant site (Fig 6 and 7). It was also necessary to augment the site with a GBR technique (Fig 7); a periosteal relieving incision was made to allow for tension free wound closure and coronal mobilisation of the buccal flap.

The dental implant was placed into the site two-three mm below the CEJ of the adjacent teeth. The patient’s own bone was harvested and placed over the exposed threads and a layer of Laddec bovine bone was placed over the autograft (Figs. 8 - 9). A cross-linked bovine membrane Memlok was placed over the xenograft using the principles of GBR (Fig. 10).

The AlloDerm was rehydrated in a saline bath (Fig. 11) and then sutured to the buccal flap (Fig. 12) to increase the gingival volume for the future implant crown. A tension-free flap was closed using 5/0 polypropylene sutures.

At the three months review it was noted the gingival volume of the UR1 site was very good to allow for the correct emergence profile of the implant crown (Figs. 13 - 14). A fixture level impression was taken for a screw retained crown. The patient was happy with the shade and shape of the new implant crown (Figs. 15 - 16).
BioHorizons comprehensive Biologic product portfolio offers a wide range of evidence-based regeneration options to ensure ideal site development. Delivering optimal aesthetics and successful implant placement is the goal of our proven hard and soft tissue products.

**Biologic Solutions**

BioHorizons comprehensive Biologic product portfolio offers a wide range of evidence-based regeneration options to ensure ideal site development. Delivering optimal aesthetics and successful implant placement is the goal of our proven hard and soft tissue products.

- **AlloDerm®** – regenerative tissue matrix for use as an effective alternative to palatal tissue for soft tissue augmentation*

- **MinerOss™** – blend of mineralized allograft cancellous and cortical chips that provide an osteoconductive scaffold for bone regeneration

- **Mem-Lok™** – resorbable collagen membrane that is cell occlusive and slowly resorbing to promote clot maintenance and bone formation

For more information, contact BioHorizons
Customer Care: 01344 752560
Email: infouk@biohorizons.com
visit us online at www.biohorizons.com

---

The case of the Sentimental tooth

Author_ Dr James Main, BDS (Edin) MFGDP RCS (Eng)

Case 1
This patient first came to see me when she was 62 years of age. For several years she had suffered with pain on the right side of her face. She had suffered three trauma injuries over the years on the right side; the last involved being hit by a boom which served to worsen her condition. The patient had been seen by various specialists and her last maxillofacial treatment involved a combination of Tegretol (for severe pain) and occasional Amitriptyline. She found that fortnightly facial massages also helped to keep the pain under control. The patient had a generally well maintained mouth with evidence of localised areas of periodontal disease in particular around the UR4 and UR7. As the patient was keen to have implant retained teeth on the right side, she was sent for a CT scan.

The OPG view of the scan (Fig. 1) showed severe bone loss around the UR7 and with a thickened lining of the right maxillary sinus. The 3D CT view indicated a perforation of the maxillary floor (Fig. 2) and hence a constant chronic infective state communicating into the sinus which would be consistent with the thickened sinus lining. The patient was very reluctant to be lose the UR7 and advised me how her previous dentist and the periodontal specialist were trying to save this tooth, in fact not long before she saw me she had undergone further periodontal therapy on it.
Simplicity is The Key to Success

The MIS SEVEN implant has a highly advanced surface with a high rate of successful osseointegration (98%), which was validated by extensive worldwide research and clinical studies in cooperation with world-class universities and scientific research institutes. Its unique geometrical design gives the SEVEN implant the important features of simple, quick and safe insertion, high primary stability, and compatibility in the most complex cases in every area of the jaw.

The MIS SEVEN implant is the only implant system in the world that comes with a specially designed and sterilized final drill, allowing a short and safe drilling procedure.

MIS makes it simple with SEVEN implant. The only implant in the world that comes with a specially designed and sterilized, single use, final drill, allowing a short and safe drilling procedure. To learn more about MIS visit our website: www.mis-implants.com or call us: 01255 424624
My advice was to extract this tooth and to replace the missing teeth on that side with a Nobel Replace implant retained bridge (Fig. 3). An added benefit would be the relief of her chronic facial pain. She took my advice, the treatment was duly carried out and the facial pain ceased. Four years later she is still symptom free and no longer takes any Tegretol or Amitriptyline.

Case 2

This lady presented us with a problem of function in that she only had three functional upper anterior teeth left that were acting as her main chewing teeth. Furthermore she had numerous retained roots and a root filled UL7. Whilst it is clear that the upper arch was not in the best state of oral health, the issue I would like to focus on here is that of retained roots.

Sometimes when we extract teeth the crown fractures and we are left with the root retained in the bone. In this situation we may make the decision not to further extract the root due to the potential difficulties this course of treatment may involve. The second reason to leave the retained root in-situ is to maintain the bone anatomy in the area. Both are reasonable reasons to have retained roots.

In the first instance, if we forego root extraction to avoid procedural complications, at the very least we should monitor the retained root with annual radiographs to ensure that the bone around the root is intact and healthy. This should also reveal a continuous lamina dura around the retained root(s). If the clinician fails do this, they will have no idea what damage may be occurring due to chronic infection caused by the retained roots.

With regard to the second mode of thought (to keep retained roots in order to maintain the bone anatomy) we now have perfectly good bone substitutes to place into sockets where a tooth has been extracted, such as Bio-Oss collagen by Geistlich. The OPG for this patient (Fig. 4) clearly shows that the UR4 retained root is affecting the bone around it with a large radiolucency (Fig. 5), which is indicative of a chronic infection around the root. The surgical picture indicates the size of the defect produced as a result of the chronic infection (Fig. 6); this presents a real problem when placing implants in order to return this patient back to normal function. Ultimately, we did find healthy bone to place the Nobel Replace tapered implant, which was used to retain an upper implant -retained denture.

This is another example that demonstrates how we need to make judgements early on or take the necessary action to ensure bone loss does not occur at a later date which can cause difficulties in restoring the patient to full dental form and function.

Case 3

This was a patient referred to us to restore the upper anterior region with an implant retained bridge after loss of the previous bridge from...
The UL1 abutment had completely failed; the bridge was then sectioned at the juncture between the UR2 and UR1 (Fig. 7).

The patient had lost the UR1 a number of decades ago. In his earlier years after losing his tooth he had a denture which he found extremely unpleasant. Thereafter he had fixed bridgework. When he presented before his initial consultation he was again wearing a denture which he found extremely distressing especially as his job involves meeting the public on regular basis. We can see from the radiographs that the UR2 (Fig. 8) and UL2 (Fig. 9) have been extensively treated and it is likely that in view
of the reluctance of the patient not to have a denture, both the dentist and the patient are well motivated to ensure the patient avoids this situation arising.

However, from the surgical photographs a large labial defect is evident due to the failed UL1 bridge abutment that had previously been extracted (Fig. 10). A labial defect with a large cystic lining could be seen in the position of the UL2 (Figs. 11 - 12).

This again presents a problem when placing implants to supply the patient with another fixed bridge. This is likely to be a classic case of the ‘sentimental tooth’ whereby the patient was highly motivated to avoid having another denture and the dentist was doing their best to ensure this situation was avoided. Hence the history of treatment seen in the UR2 and UL2. However, there does come a point where the dentist has to make a judgement in a timely manner if the original plan did not succeed.

When the patient came to us his original intention was to have one implant in order to retain a bridge cantilevered from it to replace the upper centrals. I advised him that the condition of the laterals was not good and it was likely that in the next five-10 years they would fail, creating further problems in that area of his mouth. I gave him the option of having a fixed Nobel Replace implant retained bridge from UL2 to UR2 (Figs. 13 - 14). After some consideration he decided to proceed with this course of treatment which would mean the removal of historical treatment, along with its potential problems and a fresh start.

**Conclusion**

As stated at the beginning we all come across the situation where we are treating these so-called sentimental teeth. We all practise, to a greater or lesser degree, ‘herodontics’ where we do our utmost to please our patients delivering what may seem at the time to be the best treatment we can offer. When considering whether or not you have reached this stage you must ask yourself whether keeping the tooth with further treatment is going to benefit the patient in the long term, and whether the risks and benefits weigh up. Or are you simply delaying the inevitable loss of the tooth whilst paying a clinical price that may compromise future treatment after the tooth has been lost. If the answer to the latter is ‘yes’, may I suggest that the patient be referred for a dispassionate second opinion.

**author info**

**Dr James Main BDS(Edin) MFGDP RCS(Eng)**

Dr James Main qualified from Edinburgh University in 1984. Dr Main started his career in Westminster Hospital in London then spent a period in the Royal Navy as a Dental Officer and has been in Private Practice since 1990 both in England and in the Caribbean. He has taught extensively and acts as a Mentor to other dentists wishing to use world leading Nobel Biocare dental implant system. Dr Main is the Principal of the James Main Dental Partnership and is primarily based at his Glastonbury practice in Somerset.
The annual Nobel Biocare UK Symposium is a world-class dental conference that attracts delegates from far and wide to a two-day programme of events.

Enjoyed by dentists, lab technicians, nurses and support staff alike, this year the Symposium takes place 9th-10th September at the Millennium Gloucester Hotel in the heart of London’s Kensington.

Attendees will enjoy a varied programme of presentations, workshops, masterclasses and hands-on training led by world-renowned speakers.

Day one of the Symposium includes sessions examining implants and their functions from inception to the future. These sessions are divided into three key topics, Surgical, Laboratory and Team Approach:

**Surgical Speakers**

- Dr Paulo Malo is the ideal speaker for the All-on-4™ session, as he was responsible for developing the innovative surgical technique, which has revolutionised implantology and fixed oral rehabilitation.
- Inaugural recipient of the NobelPharma Award in 1995, Dr Patrick Palacci hosts the Soft Tissue Management session. Dr Palacci heads the Brånemark Osseointegration Center in Marseilles and has developed techniques for optimal implant positioning, papilla regeneration and aesthetic implants.
- The NobelActive™ session will be presented by Dr Blackie Swart. Dr Swart is a trainer for the NobelActive™ global advisory board and is the lead investigator on NobelActive™ in South Africa.
- Dr Eric Van Dooren brings his expertise to the Aesthetics session. Dr Van Dooren lectures internationally, principally on aesthetics, implants and aesthetic periodontal surgery, and has published articles worldwide.

**Laboratory Speakers**

- Luc Rutten is a renowned speaker on ceramic restoration, aesthetics and implantology. Mr Rutten established the Dental Team in 1985, a pilot laboratory for the German Vita Company, specialising in aesthetics and function in ceramic restorations and implant suprastructures.
- Dr Christian Coachman is currently the head of Team Atlanta Dental Laboratory, Georgia. Formerly a technical consultant for Creation Willi Geller Ceramics at Oraltech, Dr Coachman is founder and professor of the Insight Group Ceramic Training Center.
- Michele Temperani is co-owner of a full-service dental laboratory in Florence, where he manages the ceramic department. Mr Temperani is active in research and didactic activities for the development of high-strength ceramic materials and has co-authored articles in publications worldwide.
- Dr Stefan Holst holds a position as Clinical Associate Professor at the Friedrich-Alexander-University, where he also serves as senior lecturer and heads the CAD/CAM research laboratories.

**Team Approach Speaker**

- Karima Mohamed has a clinical practice in implant hygiene at the Vassos Clinic in Canada and is a Clinical Assistant Professor for the Dental Hygiene department at the University of Alberta. Karima has conducted clinical research, published papers and lectured in Canada, the USA, Europe and Asia.

On day two, delegates will be able to take part in hands-on sessions and workshops in the form of masterclasses lead by an enviable list of world class speakers. These interactive sessions offer the opportunity to ask the kind of in-depth questions that are not possible in a larger setting. Topics include NobelProcera™ Overdenture Bars, Restoring All-on-4™, All-on-4™ Laboratory Techniques, NobelActive™, NobelClinician™, Zygoma and Soft Tissue Management.

The Nobel Biocare UK Symposium is always a well attended event and demand is expected to be high. Places are limited and will be allocated on a first come, first served basis, so delegates are advised to register as soon as possible.

To register contact The Conference Shop on 0845 873 6299 or email: sales@conferenceshop.com.
Nobel Biocare:

All-on-4™

Increasing patient acceptance is a priority for many dental practitioners. Nobel Biocare's All-on-4™ system can help you achieve just this.

Eliminating the need for sinus lifting, nerve repositioning and complex bone grafting, the All-on-4™ system offers patients a more affordable solution to restore missing teeth with highly predictable results.

With its immediate loading function, the All-on-4™ system enables clinicians to provide their patients with a less traumatic experience in the chair and a fast recovery. In many cases, the entire treatment will be completed within just one day.

Nobel Biocare's All-on-4™ system offers many more clear benefits to dentists and patients alike, including:

- Stability even in minimum bone volume
- Compatibility with NobelGuide™
- Increased efficiency

Ideally suited to be the clinician’s second implant system, the All-on-4™ broadens the clinician’s potential patient base and is supported by Nobel Biocare’s dedicated team of experienced representatives.

Please call Nobel Biocare for further information and technical advice on: 020 875 633 00

UCL Eastman:

Bring Implant Dentistry into Your Everyday Practice

The UCL Eastman Diploma in Implant Dentistry allows dentists to gain a complete understanding of dental implants for oral rehabilitation and earn a university-accredited postgraduate qualification.

The dynamic part-time programme requires a commitment of only two or three days per month over the course of three years, giving practitioners the flexibility to incorporate professional learning into their lives without sacrificing practice work.

Course content is designed to suit the qualifications and experience of any GDPs or specialists who would like to bring implant dentistry into their repertoire and gain verifiable CPD.

Participants can expect a stimulating and challenging programme taught via seminars, hands-on procedures, live surgery and interactive lectures brought by a highly accomplished team of GDC registered specialists and guest speakers from around the world. The course structure is as follows:

- Year 1: Patient selection, diagnosis, planning and basic surgery
- Year 2: Restorative aspects of implant dentistry
- Year 3: Consolidate years 1 and 2, patient care and practice management

Due to the popularity of the course, places are limited and will be allocated by competitive entry.

Further details of the programme can be accessed from www.eastman.ucl.ac.uk/cpd

For more information or to register, please contact: Nisha Gosai, Registry Officer, on 020 7915 1155 or email n.gosai@ucl.ac.uk

Manufacturer News
SAVE CELLS

NEW EMS SWISS INSTRUMENTS SURGERY – SAVING TISSUE WITH NEW INNOVATIONS IN IMPLANT DENTISTRY

The inventor of the Original Piezon Method has won another battle against the destruction of tissue when dental implants are performed. The magic word is dual cooling – instrument cooling from the inside and outside together with simultaneous debris evacuation and efficient surgical preparations in the maxilla.

COOLING HEALS
A unique spiral design and internal irrigation prevent the instrument’s temperature from rising during the surgical procedure. These features combine effectively to promote excellent regeneration of the bone tissue.

EMS Swiss Instruments Surgery MB4, MB5 and MB6 are diamond-coated cylindrical instruments for secondary surgical preparation (MB4, MB5) and final osteotomy (MB6). A spiral design combined with innovative dual cooling makes these instruments unique in implant dentistry.

CONTROL SAVES
Effective instrument control fosters atraumatic implant preparation and minimizes any potential damage to the bone tissue.

PRECISION REASSURES
Selective cutting represents virtually no risk of damage to soft tissue (membranes, nerves, blood vessels, etc.). An optimum view of the operative site and minimal bleeding thanks to cavitation (hemostatic effect!) further enhance efficacy.

The new EMS Swiss Instruments Surgery stand for unequaled Swiss precision and innovation for the benefit of dental practitioners and patients alike – the very philosophy embraced by EMS.
Bio Horizons:

An evening with Dr David Garber

Acclaimed American Prosthodontist, Dr David Garber will be hosting a one-off evening at the Royal College of Physicians on May 25th, 2011, entitled, ‘Evolving Implant Aesthetics: Options, Alternatives & Solutions’.

This program is an alternate perspective into how “aesthetics-driven” implant dentistry has evolved, and why in 2011 it is essential to combine both the “pink” and “white” aspects to achieve that optimal cosmetic result. Specifically the evening will include virtual treatment planning for gingival outcomes, surgical augmentation, hygiene and maintenance beyond aesthetics over the long-term, the adjacent implant dilemma and submerged root alternative.

Lecturing extensively on multi-disciplinary approaches to optimizing aesthetics, Dr Garber’s programmes integrate restorative dentistry and periodontic implants in developing total dental-facial harmony. Presenting throughout the U.S., Europe, and Asia, he has also practiced in South Africa and here in Great Britain.

At the cutting edge of implant prosthodontics and an integral part of “Team Atlanta” with the Salama brothers and Ronald Goldstein, Dr Garber will be talking on evolving implant aesthetics and the role of BioHorizons implants in this area.

Starting with registration from 6-7pm when refreshments will be served, the lecture will run from 7-9pm in the Seligman Theatre of the Royal College of Physicians, with 2 hours of CPD. For details call 01344 752560 NOW, email: infouk@biohorizons.com or visit www.biohorizons.com

Nuvview:

Groundbreaking Magnification with Nuvview at ADI Team Congress 2011

The Association of Dental Implantology Team Congress 2011 in Manchester played host to an unsurpassed programme of speakers and an exhibition hall featuring many diverse technologies and product lines new to the dental implant market.

On display was Nuvview’s OPMI Pico microscope – one of the most sophisticated dental microscopes currently on the market. Featuring advanced ergonomics, shadowless illumination, outstanding magnification and a choice of integrated video and stills camera facilities, the microscope was a main attraction at Nuvview’s stand.

Other products of interest included the EyeMag Pro and EyeMag Smart dental loupes series with their wide range of magnification options from 2.5x (EyeMag Smart) – 5x (EyeMag Pro x3.2 –x5) and variety of working distances.

Nuvview also offers a comprehensive service including a survey of the client’s equipment needs, full installation, training and prompt aftercare, and also offers the proven alcohol-free Continu range of disinfectants.

For more information call 01453 872266 or email info@nuview-ltd.com www.voroscopes.co.uk

Astra Tech:

OsseoSpeed™- anatomically designed for sloped ridges

The Astra Tech launches an anatomically designed implant for sloped ridges called OsseoSpeed™ TX Profile. This uniquely shaped implant eliminates the common compromise between marginal bone levels and aesthetics in sloped alveolar ridge situations.

The implant design meets a clinical need: it facilitates implant placement when there is a sloped ridge and optimizes implant position to maintain marginal bone support and aesthetics. “The sloped design lets the implant adapt to the anatomy rather than letting the anatomy adapt to the implant design; this works particularly well for placement in the aesthetic zone,” says Professor Dr. Dr. Wilfried Wagner, of the Johannes Gutenberg University Mainz, Department for Oral and Maxillofacial Surgery, Germany. Due to the sloped neck of this dental implant, Astra Tech recommends that dental professionals who use this product have extensive implant treatment knowledge.

For further information, please contact: Chris Orpin, Product Manager, Astra Tech Ltd Telephone: 0845 450 0586 Or visit www.astratechdental.co.uk
Convenient & professional

for all your Core Subject needs visit www.corecpd.com

Email info@smile-on.com or
call 020 7400 8989

wherever and whenever
Diary Dates

2011

British Dental Conference and Exhibition 2011
19–21 May 2011
Manchester Central Convention Complex (MCCC)

Implant Treatment – Focus on Value
Friday, 20 May 2011
Glasgow
DENTSPLY Friadent UK and Ireland

Evidence Based Hierarchy of Implant Treatment Options in the Aesthetic Zone
13 Jun 2011
Belfast
ADI Study Club

World Aesthetic Congress 2011
17–18 June 2011
Business Design Centre in Islington
Charity dinner, Landmark Hotel, London

Risky Business
27 Jun 2011
Chester
ADI Study Club

Occlusal Concepts for Implant Dentistry
30 Jun 2011
Warwickshire
ADI Study Club

"But the orthodontist said I would be able to have implants" Implant restoration for patients with congenitally missing teeth – avoiding problems through an effective interdisciplinary approach
30 Jun 2011
Newcastle
ADI Study Club

2nd Neoss LINK Team Days
International Scientific Congress for Implant Dentistry
30th Sep 2011 to 1st Oct 2011
Hotel Regina Palace, Lake Maggiore, Italy

ITI Congress UK and Ireland 2011
1 - 3 December 2011
Implants in Practice
BT Convention Centre Monarchs Quay Liverpool, L3 4FP

International Events 2011

FDI Annual World Dental Congress
14–17 September
Mexico City, Mexico

AAOMS Dental Implant Conference
2 – 4 December
Chicago, United States

Implant Courses 2011

Place Dental Implants – Live
23rd May
Plymouth Dental Centre of Excellence
Plymouth

Place Dental Implants – Live
27th June
Plymouth Dental Centre of Excellence
Plymouth

Implant Training for Dental Nurses
Friday, 14 October 2011
Devon Dental Centre of Excellence
Ashburton
submissions: formatting requirements

Please note that all the textual elements of your submission:
- the complete article,
- all the figure captions,
- the complete literature list, and
- the contact info (bio, mailing address, E-mail address, etc.)

must be combined into one Word document. Please do not submit multiple files for each of these items.

In addition, images (tables, charts, photographs, etc.) must not be embedded into the Word document. All images must be submitted separately, and details about how to do this appear below.

Text length
Article lengths can vary greatly—from a mere 1,500 to 5,500 words—depending on the subject matter. Our approach is that if you need more or less words to do the topic justice then please make the article as long or as short as necessary.

We can run an extra long article in multiple parts, but this is usually discussing a subject matter where each part can stand alone because it contains so much information. In addition, we do run multi-part series on various topics.

In short, we do not want to limit you in terms of article length, so please use the word count above as a general guideline and if you have specific questions, please do not hesitate to contact us.

Text formatting
Please use single spacing and un-indented paragraphs for your text. Just place an extra blank line between paragraphs.

We also ask that you forego any special formatting beyond the use of italics and boldface, and make sure that all text is left justified.

If you would like to emphasise certain words within the text, please only use italics (do not use underlining or a larger font size). Boldface is reserved for article headers.

Please do not "centre" text on the page, add special tab stops, or use underlining as all of this must be removed before layout. If you require a special layout, please let the word processing program you are using help you to do this formatting rather than doing it by hand on your own.

If you need to make a list, or add footnotes or endnotes, please let the Word processing program do it for you automatically. There are menus in every program that will help you to do this. The fact is that no matter how careful one might be, errors have a way of creeping in when you try to hand number footnotes and literature lists.

Image requirements
Please number images consecutively throughout the article by using a new number for each image. If it is imperative that certain images are grouped together, then use lowercase letters to designate the images in a group (ie 2a, 2b, 2c).

Please put figure references in your article wherever they are appropriate, whether that is in the middle or end of a sentence. If you are not directly mentioning the figure in the body of your article, when it appears at the end of the sentence the figure reference should be enclosed within parenthesis and be inside the sentence, meaning before the fullstop.

In addition, please note:
- We require images in TIF or JPEG format.
- These images must be no smaller than 6 x 6 cm in size at 300 DPI.
- Images cannot be any smaller than 80 KB in size (or they will print the size of a postage stamp!).

Larger images are always better, and something on the order of 1 MB is best. Thus, if you have an image in a large size, do not bother sizing it down to meet our requirement but send us the largest file sizes available. (The larger the starting image is in terms of bytes, the more leeway the designer has in terms of resizing the image to fill up more space should there be room available).

Also, please remember that you should not embed the images into the body of the text document you submit. Images must be submitted separately from the textual submission.

You may submit images through a zipped file via E-mail, unzipped individual files via E-mail, or post a CD containing your images directly to us (please contact us for the mailing address as this will depend upon where in the world you will be mailing them from).

Please do not forget to send us a head shot photo of yourself that also fits the parameters above so that it can be printed along with your article.

Abstracts
An abstract of your article is not required. However, if you choose to provide us with one, we will print it in a separate box.

Contact info
At the end of every article is a Contact Info box with contact information along with a head shot of the author. Please note at the end of your article the exact information you would like to appear in this box and format it according to the previously mentioned standards. A short bio may precede the contact info if you provide us with the necessary information (60 words or less).

Questions?
Please contact us for our Author Kit, or if you have other questions:

Group Editor
Lisa Townshend
lisa@dentaltribuneuk.com
What’s Missing?

Three global titles from the Dental Tribune International portfolio are coming to the UK. Published quarterly, each of these glossy, clinically-focused titles aims to bring you the latest developments in the fields of implantology, endodontics and cosmetic dentistry in a clear, easy to read format.

What’s missing?

implants

Fill the gaps... implants, the international magazine of oral implantology, delivers the latest thinking in this fast-moving area of the dental profession. User-oriented case studies, scientific reports, meetings, news and reports, as well as summarised product information, make up an informative read.

You got the look...

cosmetic dentistry

You got the look... cosmetic dentistry - beauty & science presents the most significant international developments in the world of cosmetic and restorative dentistry. With an editorial mix of speciality articles, clinical studies, case reports, industry reports, reviews, news, and lifestyle articles, cosmetic dentistry leads the way.

Enjoy Endodontics?

roots

Down your canal... roots is the place to keep up with the latest developments in the endodontic arena. A combination of comment, studies, case reports, industry news, reviews, and news, those professionals with an interest in endodontics will find roots invaluable.

£30 each for a yearly subscription or as a special offer take all three titles for just £50 per year.

For more information or to subscribe please call Joe Aspis on 020 7400 8969 or email joe@dentaltribuneuk.com
All-on-4™
The efficient treatment concept with immediate loading.

All-on-4 was developed to provide clinicians with an efficient and effective restoration using only four implants to support an immediately loaded full-arch prosthesis.* Final solutions include both fixed and removable prostheses such as NobelProcera Implant Bridge Titanium or Implant Bar Overdenture. The tilted posterior implants help avoid relevant anatomical structures, can be anchored in better quality anterior bone and offer maximum support of the prosthesis by reducing cantilevers. They also help eliminate the need for bone grafting by increasing bone-to-implant contact. All-on-4 can be planned and performed using the NobelGuide treatment concept, ensuring accurate diagnostics, planning and implant placement.

Nobel Biocare Services AG, 2011. All rights reserved. Nobel Biocare, the Nobel Biocare logotype and all other trademarks are, if nothing else is stated or is evident from the context in a certain case, trademarks of Nobel Biocare.

* If one-stage surgery with immediate loading is not indicated, cover screws are used for submerged healing.

Disclaimer: Some products may not be regulatory cleared/released for sale in all markets. Please contact the local Nobel Biocare sales office for current product assortment and availability.

Nobel Biocare is the world leader in innovative and evidence-based dental solutions. For more information, call + 44 (0) 208756 3300 (UK), 1800 677306 (Ireland) or visit our website.

www.nobelbiocare.com