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# implants

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2 2008

**_user report**
Early loading of root form and conical implants with a sand-blasted large-grit acid-etched surface: A 6-year clinical follow-up

**_social events**
4th Arab-German Implantology Meeting in Dubai a Great Success

**_worldwide events**
DGZI and AO Boards of Directors Met in Boston

DGZI
Deutsche Gesellschaft für Zahnärztliche Implantologie e.V.

**Dr Rolf Vollmer**
1st President & Treasurer of DGZI

# Quality and Professionalism "made in Germany"

In times of worldwide globalization and merging of economics, science, and cultures, a large professional association such as the DGZI can gaze upon its multiple worldwide connections with pride. The objective of the oldest scientific implantology association in Europe has always been to integrate science and practical experience at a high level also at general dentistry practices. The DGZI is a synonym for the practicability of scientific knowledge transfer to implantologists' practices. The development of the DGZI, in particular in recent years, has led to a high degree of recognition as well as excellent international reputation both in Germany and abroad.

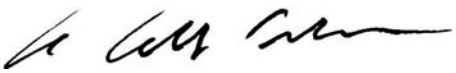
Recently, the 4th Arab-German Implantology Conference of DGZI was held in Dubai. The conference had an interesting program that has made it one of the foremost educational events of our time in the Middle East Region. Over 250 participants from 18 countries visited this international conference. Compared to the increasing number of dental educational seminars in Germany and worldwide, this success cannot be valued highly enough. In principle, the success of this DGZI meeting is a prime example of international collegiality and friendship.

Another positive signal is that, on the occasion of the Dubai meeting, leading representatives of the region's chambers of dentists met with representatives of the DGZI executive board in order to discuss future common projects in the area of continuing education, approval of qualifications and continued scientific cooperation.

The DGZI also faces increased interest of dentists in Germany to become internationally active or care for patients from abroad. Trends that are already nomal in cosmetic surgery, orthopedics and many other fields of human medicine is now also increasingly developing in dentistry. Patients from abroad, e.g., from the Middle East and the former USSR come to Germany to receive qualified treatment. On the other hand, German physicians and dentists are welcome in these patients' homelands. Patients not only expect a well-educated and experienced physician or dentist. They also assume that the treating medical specialists will have extensive English skills, specifically in his field, in order to discuss their treatment plan and thus guarantee optimal treatment.

On the occasion of the 38th International Annual Congress of the DGZI in Bremen, the DGZI—together with the GBOI (German Board of Oral Implantology)—will hold the 1st International Exam in English in Germany. All members of the Implantology Specialists' Group of the DGZI and Experts will have the opportunity to acquire an international certificate. By means a written and oral exam they will prove that they are proficient in their specialty area and are also capable of communicating in the English language. The already large number of registrants and high demand for this international exam prove that the community views the "internationality" factor very positively.

Sincerely,



Dr Rolf Vollmer

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# Bone-oriented implantation with wide implant diameters

**author**_Hans-Dieter John, Germany

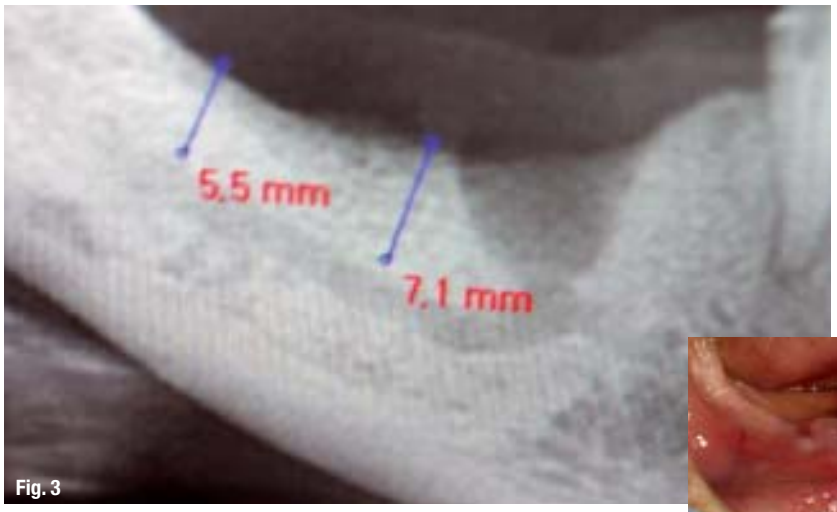

Fig. 3

**Fig. 1**_Initial situation region 46, 47.
**Fig. 2**_Occlusal view of the bone.
**Fig. 3**_OPG and CT planning before the implantation.
**Fig. 4**_Surgical situs: wide bone.
**Fig. 5**_Preparation of the implant bed with a trepan drill.

**_In many cases,** an implantation is possible using complex technologies like GBR, sinus lift, or nerve transposition only. Since the own bone still represents the best support, with a sufficient width of the jaw ridge, the existing bone support can be optimally used with wide body implants (diameter 6 or 7 mm, Clinical House, PerioType XL implants). Even for small vertical heights (<8 mm), a large area is anchored in the bone due to the wide diameter. The advantages of these implants will be demonstrated with a case report.

## _Introduction

Especially with a limited bone supply, the patient faces a number of preparatory measures. Each of these augmentative techniques is accompanied by risk potentials. Although the sinus lift seems to have emerged as the standard today, still a variety of complications are known. Beside lacerations of the mucosa of the maxillary sinus, which can result in infections during the operation or during healing, insufficient bone formation, and rejection (infection) of the augmentate are consequences, which may be observed. In the literature, their frequency is stated at 5–15%. Considering surgery, this may still sound successful, but in fact a very strict standard must be applied to elective surgery. Surely the training and the experience of the attending physician are closely related with the complication rate, but even experts observe, that the desired result is not always achieved. Then, however, corrections in an inflamed maxillary sinus are particularly difficult. It also cannot be taken for granted that in all cases the complex assemblies ossify to the extent, the attending physician wishes for. Subsequently, only moderate osseointegration takes place at the implant. The loss is pre-programmed.

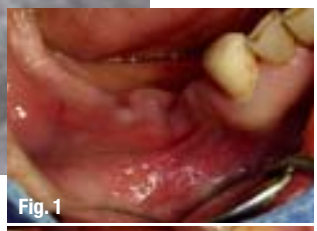
Fig. 1

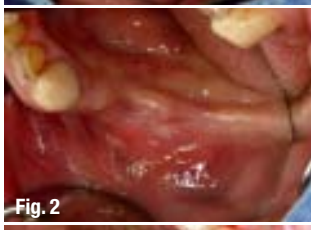
Fig. 2


Fig. 4

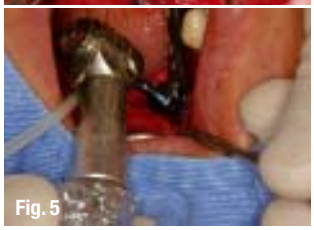
Fig. 5

In other situations, the bone supply in the lower jaw is that scarce above the nervus alveolaris inferior that the decision for a nerve transposition is made. This procedure includes numerous possibilities for complications for the patient. In 25–50% of the treatments, there are slight to severe disturbances of sensation over a long period. At over 20%, these nerve damages remain permanently. This allows the ques-tion as to how valuable an implant is compared to a healthy nerve.

To avoid complex bone assemblies in the individual case and thus spare the patient additional risks, there is the possibility, at the presence of suitable anatomical prerequisites, to insert an implant with a particularly large diameter. The area then grown into the bone often is sufficient for a prosthetic use of the implant. In addition to other implants or as a combination of several short, but wide implants, a suitable bone support may be optimally used.

## _Area for prosthetic use

A surface increase by roughening modern implants (micro-rough relief, Clinical House, Perio-Type implant) already creates a surface on the seemingly small area of the implant, which can reach the size of half a football pitch. This technology has already improved the anchorage of implants in the bone decisively. But still the direct area with which an implant can build up contact to the bone remains decisive, too. Considering an implant as a simple cylindrical object, the diameter and self-evidently the height noticeably influence the implant-bone-contact. Simple mathematical calculations on the surface of the cylindrical implant body show, how strongly the anchoring areas also depend on the diameter of the implant. As a reference, the table lists a standard implant with a length of 13 mm and a diameter of 4 mm.

The overview shows that even a very short implant of 5 or 6 mm can anchor a sufficient area in the bone. An implant with a diameter of 7 mm and a height of 6 mm (Perio Type XL, Clinical House) has nearly the same area as a standard implant (96.6% compared to the reference). The frequently used thin implants with diameters of 3.4 or 3.25 mm and a length of 13 mm only achieve about 80% of the reference implant (4 x 13 mm). Therefore, with the right indication, a short but thick implant may definitely represent an alternative. In combination with a micro-rough surface, good anchorage in the bone can be achieved.


Fig. 6


Fig. 7

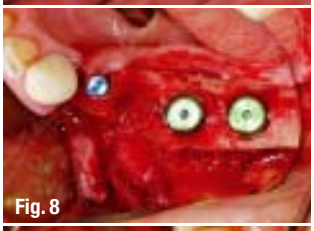
Fig. 8


Fig. 9

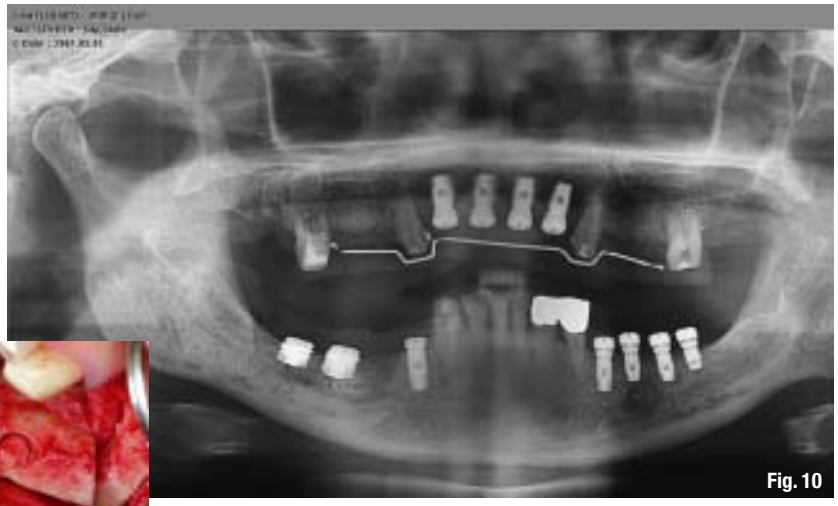
Fig. 10

**Fig. 6**_Bone harvesting with trepan drill.
**Fig. 7**_Implant region 46 inserted.
**Fig. 8**_Implants 44, 46, 47.
**Fig. 9**_Wound closure after the implantation.
**Fig. 10**_Control OPG after the implantation.

## _Avoiding complications

The bone-oriented approach has not only become up-to-date again since the regular use of a three-dimensional shooting technique. Experienced implantologists know, that a bone-oriented approach shows better results in the long term. There may be some studies that suggest, that augmentative procedures can be successful in the short term. But the supply of data is insufficient when it comes to longer periods of observation.

With short, wide implants, the existing bone can be used, often without the use of augmentative techniques. It is difficult to vertically build up a wide residual bone in the lower jaw. Following a respective diagnosis, a wide implant can optimally use the existing space.

Underneath the maxillary sinus, a wide bone is often available, too. Thus, the attending physician and the patient can use the own bone without a sinus lift as the distal support with the same anchoring area. This not only decreases the complication rate, but the surgery also becomes cheaper for the patient and less invasive. Likewise, the healing times are shorter. The distance to the prosthetic level will remain the same in most of the cases: for nearly all sinus lifts, the vertical elevation of the bone is not performed. Only in the maxillary sinus, the vertical space is increased. Thus, with this procedure there are similar crown lengths compared to common sinus lifts.

| Implant size Diameter x Length | Area without head side | Ratio reference 4 x 13 mm |
|---|---|---|
| 4 x 13 mm | 176 mm² | 100 % |
| 3,4 x 13 mm | 148 mm² | 84,1 % |
| 3,25 x 13 mm | 141 mm² | 80,1 % |
| 4 x 11 mm | 151 mm² | 85,8 % |
| 4 x 10 mm | 138 mm² | 78,4 % |
| 5 x 11 mm | 192 mm² | 109,1 % |
| 5 x 13 mm | 224 mm² | 127,3 % |
| 6 x 7 mm | 141 mm² | 80,1 % |
| 7 x 5 mm | 138 mm² | 78,4 % |
| 7 x 6 mm | 170 mm² | 96,6 % |
| 7 x 7 mm | 192 mm² | 109,1 % |

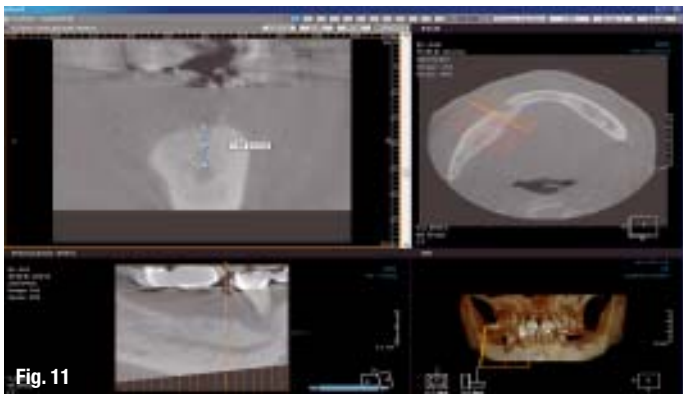
Fig. 11

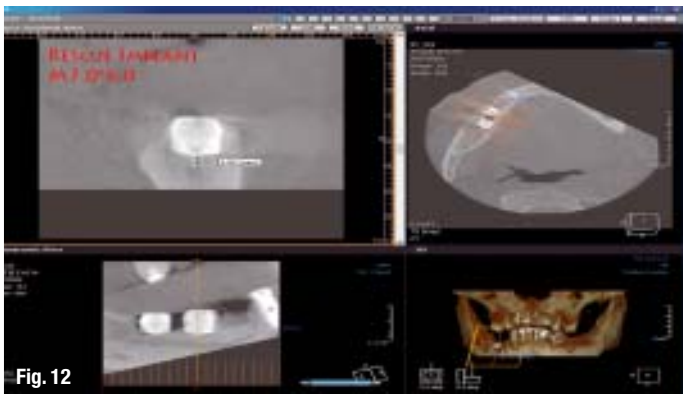
Fig. 12

**Fig. 11**_CT assesment 46 before the implantation.
**Fig. 12**_CT control 46 after the implantation.
**Fig. 13**_CT control 47 before the implantation.
**Fig. 14**_CT control 47 after the implantation.

## _Case report

The patient had a very limited vertical bone supply in the lower jaw above the nervus alveolaris inferior. In region 46, about 7 mm in height were still available, in region 47 only a little more than 5 mm. However, the jaw had a sufficient width of more than 10 mm. Due to a severe bone loss caused by an inflammation of 45, the implant positions for a fixed partial denture were determined on 44, 46, 47. The nerve exit was in region 45, so that in region 44 a sufficiently long implant with a diameter of 4 mm could be inserted. The preparation for the 7 mm implants took place in few steps, since hollow cylinder drills prepared the bed. Thus, simultaneously bone can be gained, if accompanying augmentative measures were planned. Following the three-dimensional CT analysis, the implants could be placed. The healing took place bilaterally. The post-operative CT shows, how well the existing space could be used. The patient was spared a nerve transposition, likewise a complex augmentation with bone block or particle assembly. Using the wide implants, the complicated initial situation was converted into a "normal" bilateral implantation.

## _Conclusion

At the presence of favourable anatomical prerequisites, implants with very wide diameters (6 or 7 mm) represent an alternative. Using them, complex sinus lifts or augmentations can be avoided. The surgery can be reduced to a simple implantation in the local bone. Though the procedure may have its boundaries, it is an additional option for an experienced implantologist. Additionally, the use of the wide implants facilitates the implantation sequence and spares the patients risky and also expensive tests. Thus the attending physician can offer an additional solution for the patients according to the situation._

*The Literature list can be requested from the author.*


_contact implants

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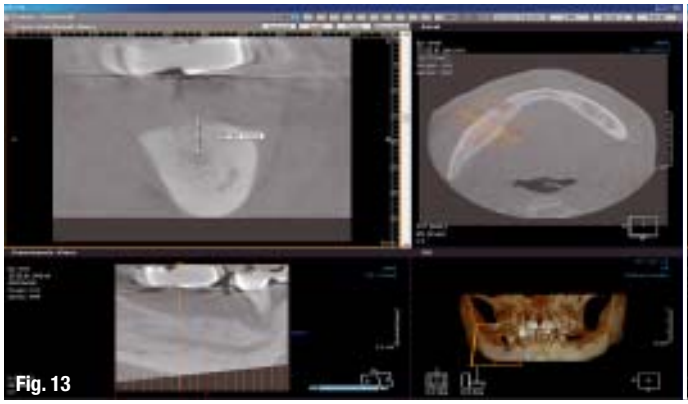
Fig. 13

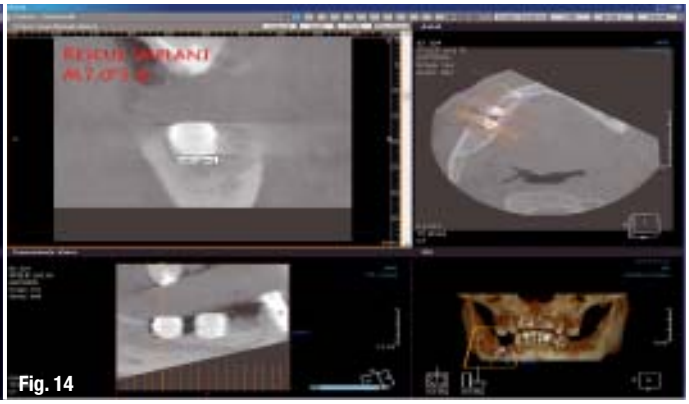
Fig. 14

# An alternative prosthetic solution after loss of three out of six maxillary implants

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[2] med.dent., Istanbul University, Faculty of Dentistry, Department of Removable Prosthodontics


Fig. 4

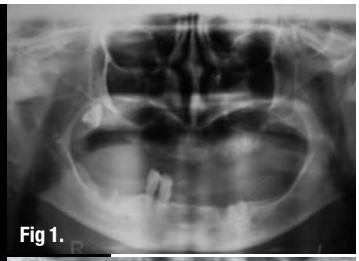
Fig 1.

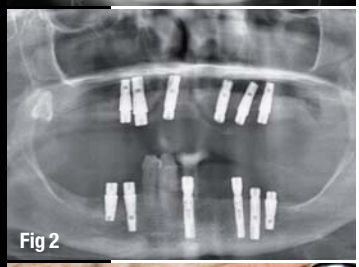
Fig 2

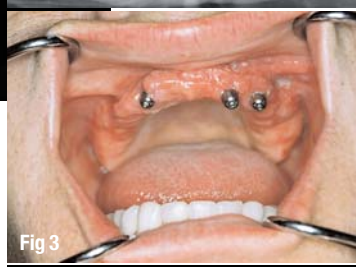
Fig 3


Abb. 5

**Fig. 1**_ The extraction of all maxillary and mandibular teeth, except #43 and #44.
**Fig. 2**_ Panoramic x-ray of 6 upper jaw and 6 lower jaw implants.
**Fig. 3**_ The maxilla after loss of 3 implants.
**Fig. 4**_ Front view of the fixed detachable bridge between 13–24.
**Fig. 5**_ Palatal view of the fixed detachable bridge between 13–24.

## _Abstract

Implant is generally a successful treatment modality. However, implant losses can cause difficulties concerning the prosthetic treatment. While a single implant loss does not change the treatment course by itself, more than one loss can make, for instance a fixed restoration, which was promised to the patient in the beginning, impossible. This article describes a case where three of the maxillary implants were lost and a different prosthetic solution for the situation was applied. Since the 60 year old female patient was insisting on a fixed denture, at least in the anterior, a detachable anterior part which was connected with BEGO's Ancora® precision attachments to the cast framework denture was constructed. The 16-month result was encouraging, but to be able to draw conclusions about the reliability of this method a longer observation period with possibly more cases is necessary.

## _Introduction

Implant is generally a successful treatment modality. However, implant losses can cause real dilemmas from time to time. While a single implant loss does not change the treatment course by itself, more than one loss can make, for instance a fixed restoration, which was promised in the beginning, impossible.

## _Case

After planning for a 60-year old female patient, following the extraction of all maxillary and mandibular teeth, except #43 and #44 (Fig. 1), lower and upper immediate dentures have been delivered. Following a 3-month healing period, 6 implants (AstraTech®, Mölndal/Sweden) have been placed in the upper jaw. 6 weeks later, 6 implants (AstraTech®, Mölndal-Sweden) have been placed in the lower jaw as well (Fig. 2). 3 months later (approximately 5 months of osseointegration time for the maxillary implants) the patient was called for the impression taking session for the prosthetic restorations. The implant in the region #26 was moving, and since it was not osseointegrated the implant was removed. Hereupon, the treatment of the patient has been completed with a fixed prosthesis on 5 implants. Individually prepable Ti-design® abutments were selected for the maxilla, and Direct Abutments® (AstraTech®, Mölndal/Sweden) for the mandibula. Initially, the bridges have been cemented temporarily and following a 1 month period without complaints, they have been cemented with polycarboxylate cement (Adhesor® Carbofine—SpofaDental—a Kerr Company/Czech Republic). Approximately 3 months later, when the patient came back with decementation problem of the maxillary restoration, it was observed that two more implants in the upper jaw were mobile. After these implants were extracted, the situation (Fig. 3) was explained to the patient and the treatment alternatives were revised. The patient was initially promised to have fixed restorations, furthermore rejected a new operation and did not want to accept any other alternative except the fixed restoration. The patient strictly wanted the visible part of the prosthesis to be fixed. So the overdenture with a bar, which was our suggestion, was rejected. Since the patient insisted on her demands and wanted to take the whole responsibility, a fixed detachable part between 13—24 (Fig. 4, 5) and a cast metal framework denture for the posterior (Fig. 6) was planned. An occlusal screwed structure for the anterior part was planned in order to prevent often decementation due to dislodging forces during denture removal. However, considering the axial inclination of the remaining upper jaw implants (Fig. 7) making the occlusal screw holes visible on the front-teeth vestibular surfaces, it was determined to manufacture a separate structure that holds the precision attachments and is carried on Uni Abutments® (AstraTech®, Mölndal/Sweden) with occlusal screws (Fig. 8, 9). A secondary structure would cover the primary one including the holes, thus solving the esthetic problem (Fig. 10).

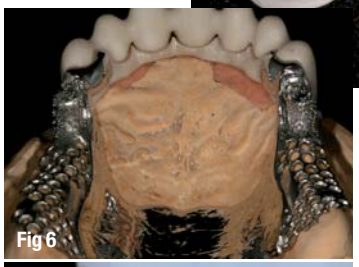
Fig 6


Fig 7


Fig 8

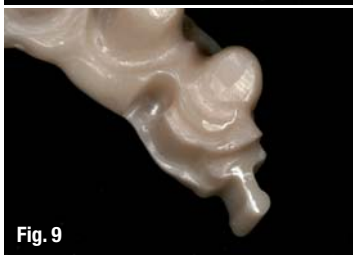
Fig. 9


Fig. 10

**Fig. 6**_ Cast metal framework denture for the posterior part.
**Fig. 7**_ The axial inclination of the remaining upper jaw implants.
**Fig. 8**_ A separate structure which is carried on occlusal screw retained abutments.
**Fig. 9**_ A separate structure that holds the precision attachments.
**Fig. 10**_ A secondary structure covering the primary one including the holes, thus solving the esthetic problem.

Considering that shrinkage would occur during casting as a result of the big volume of the primary structure which would transmit stress to the 3 implants; a passive-fitting body, prepared with a CAD/CAM system was preferred and $ZiO_2$ was chosen (ZIRKON ZAHN—Dentarius, Dental Innovation, Parma/Italy).

After taking the impressions and having performed a vertical dimension determination, a tooth setup and try in was carried out in the next session, so both the agreement of the patient in terms of aesthetics and data that would be of value to the laboratory were collected. Then, the analogue of the tooth set up was prepared with a pattern resin (Palavit G®—Heraeus Kulzer GmbH, Hanau/Germany) and the teeth of pattern resin were prepared (Fig. 11a, b, c) and the precision attachments (Ancora®, BEGO, Bremen/Germany) were attached to the most distal parts of the infrastructure. Later the $ZiO_2$ infrastructure was prepared copying the pattern resin model and the su-

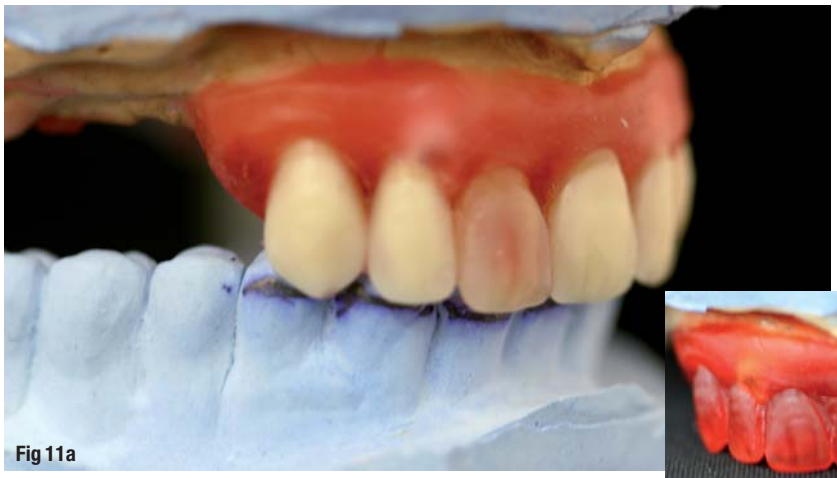
Fig 11a


Fig 11b

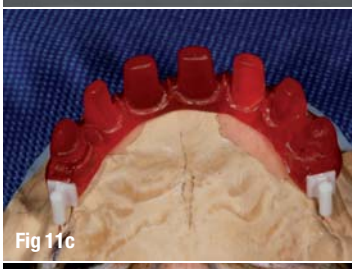
Fig 11c

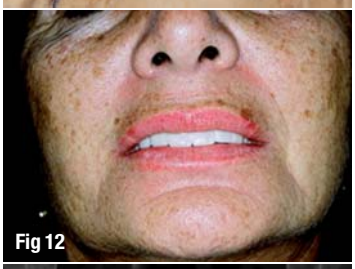
Fig 12

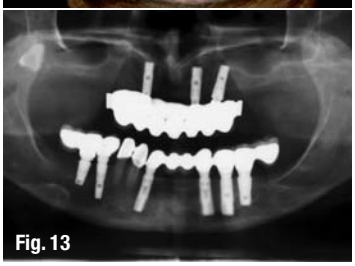
Fig. 13

**Fig. 11a**_ The tooth set up.
**Fig. 11b**_ The analogue of the tooth set up was prepared with a pattern resin.
**Fig. 11c**_ The teeth of pattern resin were prepared.
**Fig. 12**_ The patient also liked the esthetics as well as the comfort.
**Fig. 13**_ In the radiographic examination 12 months later no important bone loss was observed.

perstructure was also finished using $ZiO_2$. The cast framework denture with precision attachments was fabricated in the meantime, too. With the porcelain processing on the Zircon superstructure, the restoration took its final shape, and the patient also liked the esthetics as well as the comfort (Fig. 12). Uni Abutment® screws were tightened, whereas the bridge was temporarily cemented (Temp Bond®—Kerr®). The patient was satisfied with the end result, and no problem occurred in the next 16 months. In the radiographic examination 16 months later no important bone loss was observed (Fig. 13).

## _Discussion and Conclusions

The loss rate in implants is generally low, but it has been reported that the number of losses were concentrated in some patients.[1] A similar situation can be seen at the Department of Removable Dentures of the Istanbul University, Faculty of Dentistry. 16 losses out of 19 of 412 implants of a follow-up group have occurred in the maxilla. 15 implant losses out of these16 were in 5 female patients (three failures in each patient). Common about these patients apart from their gender is that their dental history shows tooth loss due to periodontal problems. In all 5 patients type 4 bone according to Lekholm and Zarb[2] was observed during the implant surgery. Can perhaps this kind of implant loss be related to cytokine secretion rate and periodontitis history? Some display more inflammatory cytokine formation, therefore they are more prone to periimplant inflammation. The presence of IL-1 Beta and osteocalcin out of these cytokines could point out to the fact that a faster bone resorption should be expected. In a study, it is reported that a weaker osseoadaptation should be expected with the stimulation of Interleukin-1 beta (IL-1 beta, also called OAF—osteoclast activating factor) and TNF alpha (tumor necrosis factor alpha). OAF has a significant physiological and homeostatic role in the maintenance and repair of bone tissue, however it is not well known to which extent it is physiologic and when it is pathologic.[3] The cyto-kines generally trigger osteoclast formation and activation.[4] If the patient has a severe chronic periodontitis history,[5] the possibility that the causative factors may negatively influence the success of implants is high.[6] In this case, Zirconium was preferred for the manufacturing of the superstructure. It has been reported as the result of several studies that Zirconium shows a great strength even in long structures [7,8] and that the fracture strength is comparable to metals[9, 10, 11, 12, 13, 14] It is well known that the shrinkage of CAD/CAM manufactured structures, thus the possibility that they cause contraction on the abutments is lower than after casting procedures.[15, 16] It is also known that distal extensions can transfer certain stresses to the implants.[17, 18, 19] However, if the distal extension is the width of a premolar, the forces are expected to be tolerable. In this article, a treatment alternative that can be used for patients with numerous implant losses has been introduced. To be able to draw conclusions whether the method is reliable or not a long observation period with more cases is necessary._

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# Early loading of root form and conical implants with a sandblasted large-grit acid-etched surface:

## A 6-year clinical follow-up

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### _Abstract

Aim of the retrospective study was to investigate the success rate of Camlog implants loaded after a reduced healing period. Within the study, 464 implants (411 Camlog Root-Line®, 53 Camlog Screw-Line®) were placed in 102 patients (55 male and 47 female patients) with an average age of 61 years; the implants were allowed to heal post insertionem for a period of six weeks (mandible) and 12 weeks (maxilla) prior to loading. The patients were recalled in regular intervals and implant success was determined based on the criteria of D. Buser within the parameters of a standardized recall programme. A 6-year survival rate of 99.6% for all implants was calculated, 99.8% of Root-Line and 98.1% of Screw-Line implants were considered successful. Two implants (1 Camlog Root-Line, 1 Camlog Screw-Line) had to be removed prior to loading. All other implants fulfilled the success criteria. The results indicate that a reduction of the healing period to six respectively twelve weeks for Promote®-coated implants does not seem to have a disadvantageous effect on the success rate.


### _Introduction

In recent years, successful implantation was determined and correlated with various factors relating to the dental implant. The raw material for implant manufacturing affects the result: using titanium enhances bone-to-implant contact[1], new potential materials are currently being evaluated.[2]

Furthermore, the roughness of implant surfaces is a decisive factor for intensification and acceleration of healing processes after insertion.[3] As a consequence of these findings, a large number of implants with diversely configurated surfaces were introduced into the market: implants with machined, additively (TPS) and ablatively (SLA, Promote, TiUnite®) processed surfaces. Research concentrated on analyzing their advantages and disadvantages. Several studies have shown a predominance of SLA surfaces in cell adhesion and biological healing in contrast to differently conditioned surfaces.[4,5]

Analog to the conditioning of SLA surfaces, Camlog implants are macrostructured by sandblasting with resulting cavities having a diameter from 20 to

**Fig. 1**_ Individually fabricated bar on seven Camlog Root-Line implants after four years in function.
**Fig. 2**_ The bar-retained prosthesis which has not required maintenance in this period.

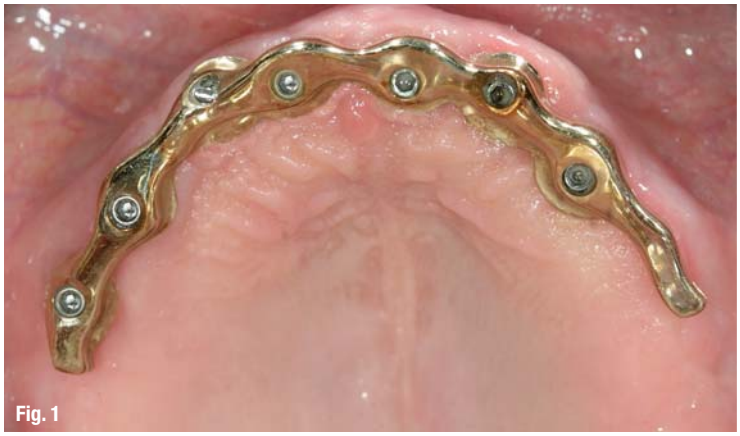
Fig. 1

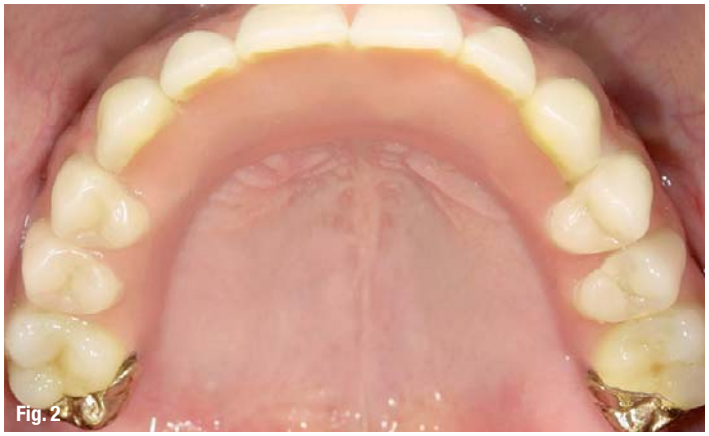
Fig. 2

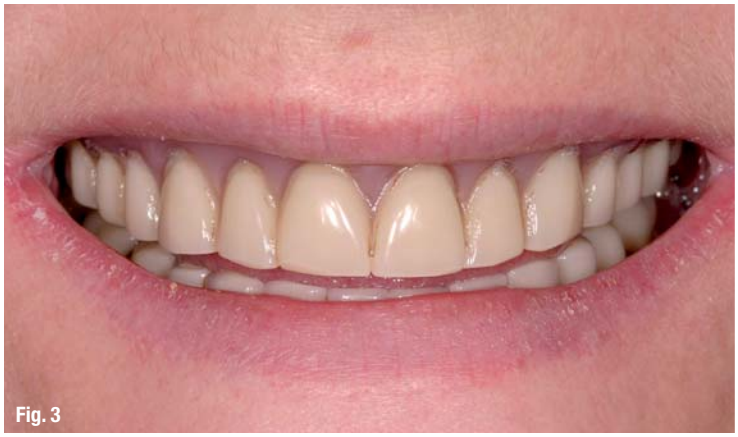
Fig. 3

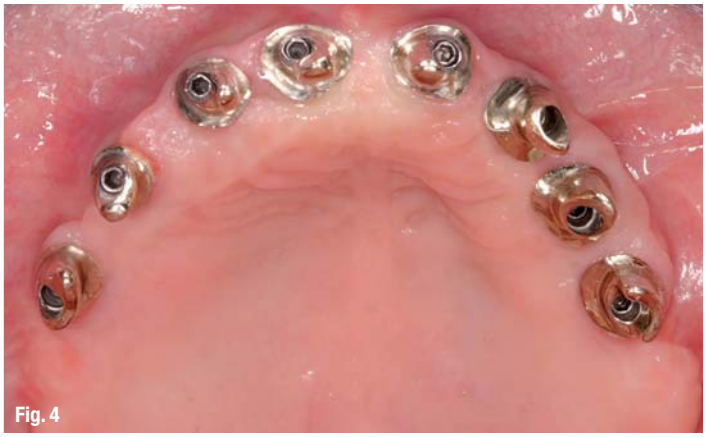
Fig. 4

**Fig. 3**_The initial situation of a 39-year-old patient with total dentures in both jaws.
**Fig. 4**_ After iliac bone grafting, implant placement and a healing period of twelve weeks, the eight Camlog Root-Line implants are loaded; placement of the abutments for the definitive restoration is performed.

50 µm. An overlying microroughness is generated by acid-etching with HCl and $H_2SO_4$. These porosities (diameters: 0.5 to 2 µm) are characteristic for sand-blasted and acid-etched implant surfaces.

Supplementing the Brånemark protocol[6], SLA coated implants were introduced with a protocol calling for reduced healing times and accelerated implant loading. Several investigations approved the success of early loading using implants with SLA surfaces.[7,8,9]

This fact led to the assumption that Promote-coated implants could show successful loading after reducing the healing period following implant insertion: Maxillary-inserted implants were restored twelve weeks after implant placement and mandibular-placed implants were to heal for six weeks prior to loading.

## _Material & methods

### Patient selection

Since 2000, 102 patients of the Department of Oral and Maxillofacial Surgery, Charité, Berlin were consecutively admitted to the study. Because of fulfilling the criteria, they were selected from a total of 268 patients. 55 male and 47 female patients with a mean age of 61 years (23–86 years) were included. Usual excluding criteria as e.g. heavy smoking, alcohol or drug abuse within the previous five years, severe bruxism, localized signs of inflammation or mucosal diseases (e.g. OLP), high risk of bacterial endocarditis, untreated diabetes mellitus, liver diseases, immunosuppression, corticosteroid treatment or current chemotherapy were applied. Patients who had received bone augmentation procedures with iliac crest bone or taking daily cumarin derivates were not excluded. Extraction sites were allowed to heal for a period of six to eight weeks prior to implant placement.

The patients were treated with 464 Camlog implants (Camlog Root-Line and Screw-Line, Camlog Vertriebs GmbH, Wimsheim, Germany) loaded twelve (maxilla) or six (mandible) weeks after insertion.

### Surgical Procedures

Two surgeons performed all implant placements. According to the protocol specified by the manufacturer, the implants were placed in various sites. Not all patients received a premedication, only candidates having a risk of endocarditis were treated prophylactically with antibiotics. 68 surgical procedures were carried out under local anaesthesia (6–8 ml Articain with 1:100,000 epinephrine [Sanofi-Aventis, Germany]) and 34 under general anaesthesia. A mucoperiosteal flap was prepared in all cases and the placement torque amounted to25–35 Ncm to achieve primary stability in all implants. Non-submerged healing was attempted for all implants

**Fig. 5**_The implant-retained fixed ceramic restoration in the maxilla.
**Fig. 6**_Final rehabilitation with a fixed implant-retained prosthesis.

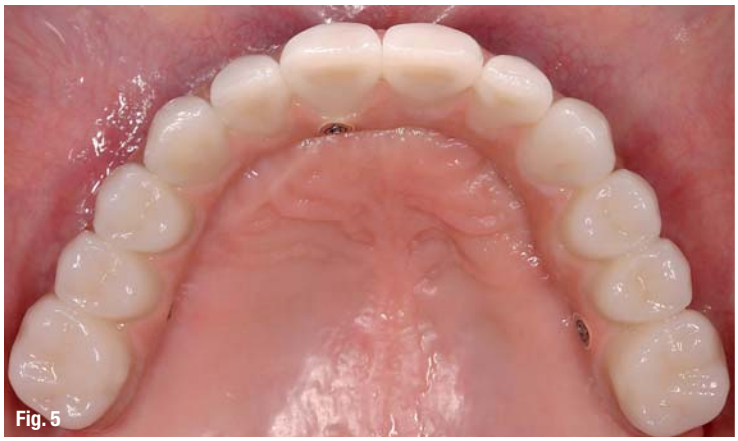
Fig. 5

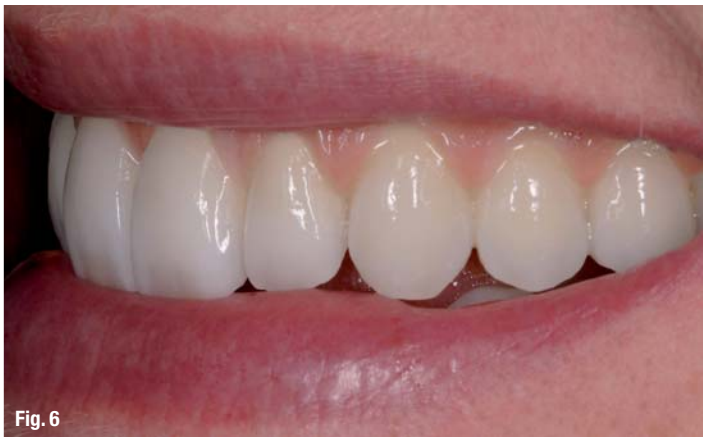
Fig. 6

**Tab. 1**_Maxillary inserted implants
**Tab. 2**_Mandibular inserted implants

| Implant position | Frequency | Per cent |
|---|---|---|
| 11 | 32 | 6.9 |
| 12 | 45 | 9.7 |
| 12 | 34 | 7.3 |
| 14 | 46 | 9.9 |
| 15 | 22 | 4.7 |
| 16 | 16 | 3.4 |
| 17 | 6 | 1.1 |
| 21 | 34 | 7.3 |
| 22 | 43 | 9.3 |
| 23 | 36 | 7.5 |
| 24 | 43 | 9.3 |
| 25 | 27 | 5.8 |
| 26 | 18 | 3.9 |
| 27 | 4 | 0.9 |

**Tab. 1**

| Implant position | Frequency | Per cent |
|---|---|---|
| 31 | 2 | 0.4 |
| 32 | 5 | 1.1 |
| 33 | 6 | 1.3 |
| 34 | 4 | 0.9 |
| 35 | 3 | 0.6 |
| 36 | 5 | 1.1 |
| 37 | 4 | 0.9 |
| 41 | 2 | 0.4 |
| 42 | 6 | 1.3 |
| 43 | 4 | 0.9 |
| 44 | 8 | 1.7 |
| 45 | 4 | 0.9 |
| 46 | 4 | 0.9 |
| 47 | 3 | 0.6 |

**Tab. 2**

placing healing caps of minimal size. A continuous suture (Monocryl 5-0, Ethicon Products, Norderstedt, Germany) was fixed to close the wound saliva-proof.

### Follow-up protocol and survival criteria

The wounds were checked at day 1 and 7, sutures were removed seven days after surgery. Existing dentures were relined with soft acrylic (Softliner, GC, Tokio, Japan).

After a healing period of six or twelve weeks implant stability was evaluated with a torque control, prosthetic rehabilitation was initiated when the torque value was ⩾ 35 Ncm.

The patients were recalled 4 weeks after prosthetic restoration and every 3 months thereafter within the first year. In the second year, the recall was twice a year and further follow-ups were scheduled annually. Orthopantomographic x-rays were performed at 6, 12, 24, 36, 48 and 60 months. Clinical evaluation was performed using a standard procedure. An implant was considered successful when fulfilling the criteria of D. Buser.[10]

### Statistical analysis

Statistical analysis was performed using SPSS 11.5. The survival rate was evaluated using the Kaplan-Meier method. To analyze the probability of an event within one group independent of time the chi-squared test and Fisher´s exact test were used. The significance was defined at $P < 0.05$.

## _Results

The 464 implants were placed in the maxilla (n=404, 87.1%) and the mandible (n=60, 12.9%) of the 102 patients (53.9% male, 46.1% female). Male patients received a total of 263 (56.7%), female patients 201 (43.3%) Camlog implants.

In total, 411 Camlog Root-Line (88.6%) and 53 Camlog Screw-Line (11.4%) were inserted.

Implants were placed in the following positions: 223 implants (196 Root-Line, 27 Screw-Line) were inserted in the anterior region of the maxilla and 181 implants (168 Root-Line, 13 Screw-Line) in the posterior region of the maxilla (Table 1). 25 Camlog fixtures (21 Root-Line, 4 Screw-Line) were located in the anterior mandible, 35 insertions (26 Root-Line, 9 Screw-Line) took place in the posterior mandible (Table 2).

The implants had a mean diameter of 4.13 mm (3.30-6.0 mm).

Camlog Root-Line and Screw-Line implants having lengths of 9 mm to 16 mm were used.

The average aftercare period was 4.25 year, as patients were observed for a period of 1.07 to 6.12 years.

Two implants failed: a mandibular inserted implant had to be explanted at the time of planned loading (Screw-Line, diameter: 4.3 mm, length: 11 mm) and one Camlog Root-Line (diameter: 4.3 mm, length: 13 mm), placed in the anterior maxilla, failed due to loosening. The remaining implants were loaded after a reduced healing period fulfilling the success criteria of D. Buser.

The 6-year survival of all implants was 99.6%. 98.1% of Camlog Screw-Line and 99.8% of Camlog Root-Line implantations were considered successful. No statistically significant differences were recorded to the implant system (Root-Line or Screw-Line), sex of the patients or the implant position relating to the low number of failures.

## _Discussion

In the present study, implants were loaded after reduced healing times (maxilla: twelve weeks, mandible six weeks). The results show non-differing success rates to implantations with extended healing periods following the Brånemark protocol and even to survival rates of SLA-coated implants loaded after a comparable shortened healing time.

Reduced healing times offer psychological, functional and aesthetic benefits for the involved patients.[11,12]

Most of the included implants were placed in the upper jaw of the patients and did not show an increase of failure. Maxillary-inserted implants formerly demonstrated a lower success rate than mandibular implants.[13] Latest study results indicate that even with a reduced healing time implants placed in the maxilla have a high survival rate.[14]

The collective also implicated patients with special conditions, e.g. having diseases (haematological disorders) or being treated with bone grafts, formulated as exclusion criteria in other investigations. This fact did not cause an enhancement of explantations or complications.

The positive effect of titanium as material for implants on bone-to-implant contact is known.[15] Camlog implants are fabricated from titanium grade 4[16] having a tensile strength of up to 750 MPa.

Implant surface modulations variably influence the mechanical interconnection of implant and bone as well as the proliferation of osteoblasts,[17] but the effect of diversely shaped titanium crystals on osteoconduction still remains unclear.[18] In 2007, Duyck et al. demonstrated a correlation of implant loading and surface roughening affecting peri-implant bone formation.[19]

Several investigations focused on healing processes and rates of implants with an SLA surface showed a high rate of success.[7,8,9] To date studies investigating characteristics of Promote® coated implants e.g. addressed the clinical performance including short Camlog implants16 or the primary stability using RFA.[20]

Based on the findings of this clinical evaluation, these results suggest that early loading of Camlog implants (maxilla: twelve weeks, mandible: six weeks) can be successfully performed._

*The reference list can be requested from the editorial office.*


_contact implants

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# Deployment of a 410 nm Diode Laser Prototype

## First experiences with the "blue diode"

**author**_ Georg Bach, Germany

Based on their market launch in 1995 within the scope of the IDS in Cologne, the diode lasers in dentistry experienced a development, which is to be described as "more than turbulent"; with the result that today diode lasers are the most represented laser technology in dental offices and are used with great success primarily for soft tissue cuts and peri-implantitis and periodontitis therapy.

_**Diode lasers currently** available on the market significantly differ technically; a large number of so-called "entry-level lasers", which normally feature a low output power and are operated primarily in cw mode but attract with a lower price, basically represent Development Stage I of the diode lasers since their basic research one and a half decades ago.

In direct contrast is a small number of so-called "high-tech diode lasers", normally more than twice as expensive as entry-level devices but instead equipped with digital or high-power pulse technology instead and definitely higher power ratings, which in the context of dental surgery is reflected in significantly improved cutting results. Between them, there is a small group of medium-class diode lasers pulsed up to 10,000 Hz. In terms of pricing they are exactly positioned between the two "extremes".

The option to apply in dentistry other wavelengths than the 810 and 980 nm used to date, has caused in the past many authors to point out that from a pure technical standpoint it is possible to develop almost any number of hard diode laser wavelengths. The device introduced in this article represents the result of those considerations. Its basic uses in dentistry need further testing and clarification:

This is a hard diode laser device, produced by an

**Fig. 1**_ 410 nm Diode laser prototype.
**Fig. 2**_ Experimental Setup for Soft Tissue Surgery.

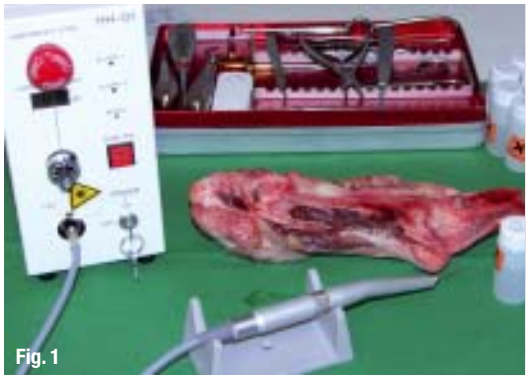
Fig. 1

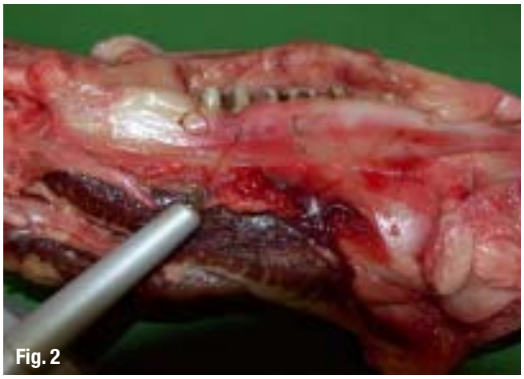
Fig. 2

Asian manufacturer, which emits monochromatic 410 nm wavelength light ("blue light").

## _Prototype

### Hard Laser

The three components are combined in a very compact cage (10 x 20 x 30—W-H-D).

Those are:

_ the electric control unit,
_ the control module,
_ the laser head.

Monochromatic 410 nm wavelength light is emitted by stimulation, having specific properties.

_ It is monochromatic (also especially pure, it consist of only one wavelength).
_ It is coherent (the waves are aligned in time and space).

### Potential Uses

The prototype was tested for the following applications in dentistry

_ in dental surgery (cuts)
_ for decontamination (microbiological test)
_ for hardening of composites (dental filling materials).

## 1. Blue Laser Diode in Dental Surgery

### Cutting

Most experiences and long-time results are available in the field of dental surgery, the result of which is a comprehensive number of citable bibliographical references and publications with established data. With appropriate laser wavelengths, all cuts commonly applied in dental surgery and periodontology, can be performed. The laser light used in each case should have a good absorption in regards to water or hemoglobin. To a very large degree and with accurate selection of power rating and time parameters, a carbon-free and narrow cut very similar to the established scalpel cut is possible. In the absence of carbon and a good postsurgical approximation of the former wound flaps provide good prerequisites for healing by first intention, which is more comfortable and faster for the patient and occurs with full histological reconstruction of the formerly separated tissues from its continuity. If laser is not suitable for cutting and is absorbed poorly, the power rating and/or the exposure time must be increased in order to even achieve an effect resp. the "desired" cutting effect. This is usually accompanied by a very strong carbonization of the wound edges and an enlargement of the width of the cut.

Post surgically wound carbonization must be reabsorbed and the wide gap in tissue continuity must be bridged. The only way this can be achieved is by second intention healing or, in other words, per granulationem. Wound healing by granulation is tedious and often painful for the patient. Normally the esthetic result is poor, and the (special) tissue originally available is replaced by simple repair tissue. In a current up-to-date study (2001) McDavid, Vobb and colleagues point out that bone damage can be avoided by an accurate selection of parameters. They used a $CO_2$ and Nd:YAG laser. Chebotareva and Zubov arrived at the same conclusions, and, in addition, could also report positive characteristics for faster healing of soft tissue. This was confirmed in total by Luomanen and Virtanen from Helsinki, who histologically backed up their assessment by means of fluorochrome coupled lectins.

### Device Settings

Cuts were made on the anthropomorphic phantom using the diode laser prototype.

The following parameters were applied:

| Power: | Mode: |
|---|---|
| 0.45 watts | cw |
| 0.65 watts | cw |
| 0.70 watts | cw |
| 0.86 watts | cw |
| 0.99 watts | cw |

### Clinical Effects

With settings from 0.45 watts and less, no realizable effects of laser light application in terms of a continuity dissection could be determined. The 0.65 watts setting indeed showed almost carbon-free soft tissue edges but at the same time poor efficiency as compared to diode laser devices with high-power pulse

**Fig. 3**_ Achieved Results After a Diode Laser Cut.
**Fig. 4**_ Tissue samples prior to processing.


Fig. 3

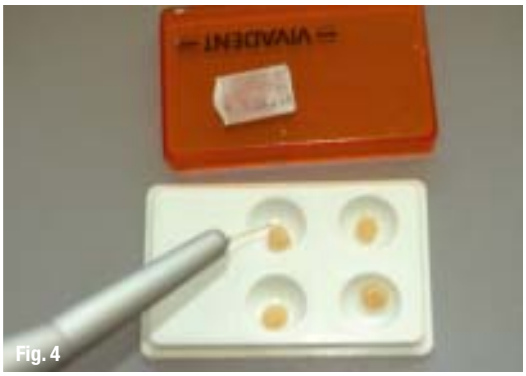

Fig. 4

**Figs. 5 – 8**_ Histological Results.

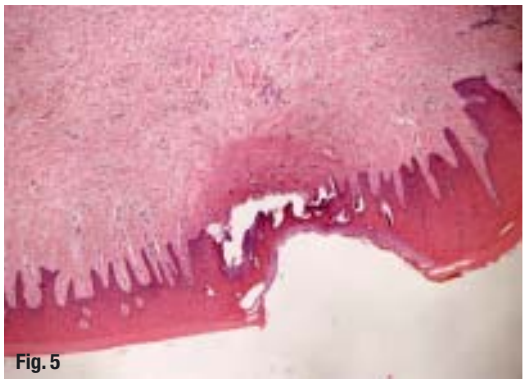
Fig. 5

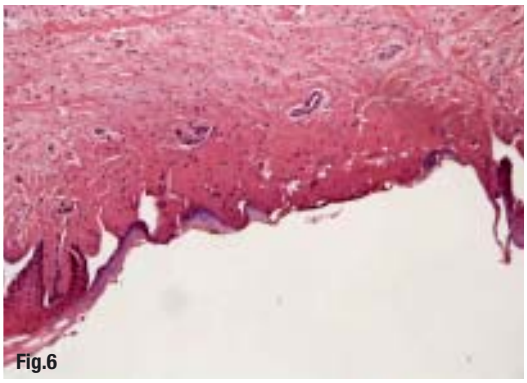
Fig.6

technology. With 0.70 watts, an improved efficiency could be achieved with lower carbonization of soft tissue edges at the same time. With the selection of higher power settings, an improvement of the cutting efficiency could indeed be achieved however at the cost of an increased laser cut induced carbonization.

**Histological Findings**

The cuts, which were performed by laser, were preserved in formaldehyde after they were removed from the pig's jaw-bone and sent for histological examination.

**Bottom Line**

A power setting of 0.70 watts in cw mode allows for the best possible achieved compromise in terms of efficiency and avoidance of a wide carbon layer. What can be said, though, is that the achievable results with the introduced device are inferior to the ones obtained by diode laser (with digital pulse technology) and other wavelengths. In terms of a cut within the scope of a dental procedure and in soft tissue surgery, the 415 nm diode is recommended within with very strong limitations only.

## _2. Soft Tissue Management

After completion of the invasive-resective phase of a surgical periodontal therapy but within the scope of implantology, mucous gingival corrections are often required. In this context, free or connective tissue transplants as well as vestibuloplasty are often considered, also including singularly performed gingivectomies and the removal of pseudo-pockets as they are quite common during non-invasively performed conventional-conservative periodontal therapy. Those minimally invasive mucogingival procedures are performed elegantly and quickly to date with the available diode laser systems. In this context, many authors point out the high absence of bleeding, significant pain reduction during surgery and the short time to heal associated with cuts performed by laser. Kreisler and colleagues (2001) report positive effects on a new attachment creation of ligamentary structures after diode laser application and confirm the decontaminating effect of injection laser.

**Device Settings**

Gingivoplasty was performed on the anthropomorphic phantom with the diode laser prototype. The following parameters were used:

| Power: | Mode: |
|---|---|
| 0.45 watts | cw |
| 0.65 watts | cw |
| 0.70 watts | cw |
| 0.86 watts | cw |
| 0.99 watts | cw |

**Clinical Effects**

With settings from 0.45 watts and less, no realizable effects of laser light application in terms of a continuity transection could be determined. The 0.65 watts setting indeed showed almost carbon-free soft tissue edges but at the same time poor efficiency in comparison to the diode laser devices with high-power pulse technology. With 0.70 watts, an improved efficiency could be achieved with lower carbonization of the soft tissue edges at the same time. With the selection of higher power settings, an improvement of the cutting efficiency could indeed be achieved at the cost of increased carbonization by laser cut.

**Histological Findings**

The cuts, which were achieved with the laser after their removal from the anthropomorphic phantom (pig's jaw-bone) were preserved in formaldehyde and sent for histological examination.

0.45 watts—"Channel-shaped change. Incomplete defect with spongiosis; a small coagulated subepithelial base with a narrow ring-shaped defective zone with a superficially brownish discoloration caused by laser coagulation."

0.65 watts—"A flat bed of the suprabasal and almost completely destroyed epithelium appears showing a narrow underlying coagulation front of the stroma."

0.70 watts—"In the lamellation and embedding of the material, a defect is observed including the epithelium in this area with a slit-shaped increase of the

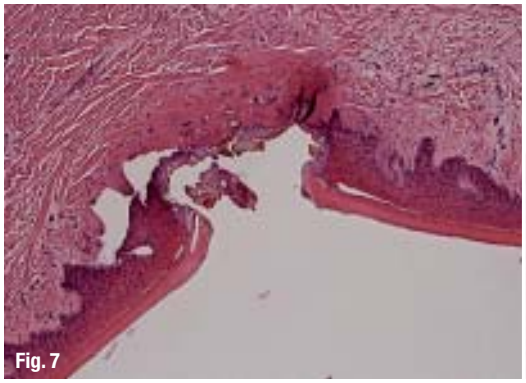
Fig. 7

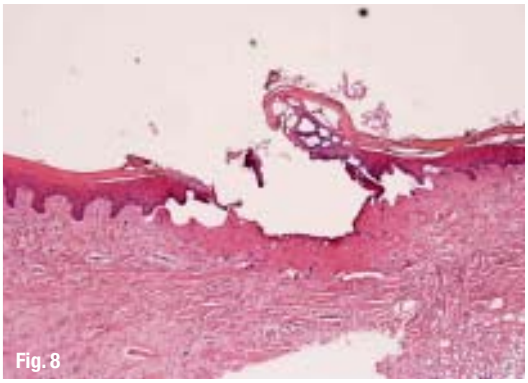
Fig. 8

side epithelium from the connective tissue base and a narrow coagulation front in the stroma."

0.86 watts—"The tissue exhibits a clear channel-shaped epithelium defect reaching almost to the stroma with a 30–40 µm wide coagulation front."

0.99 watts—"The material shows stronger dehiscence partly due to the laser coagulation, and in part wedge-shaped defect formation with a 30—100 µm wide coagulation front."

**Bottom Line**

The power setting of 0.70 watts in cw mode allows for the best possible achieved compromise in terms of efficiency and avoidance of a wide carbon layer. What can be said, though, is that the achievable results with the introduced device are definitely less than the ones obtained by diode laser (with digital pulse technology) and other wavelengths. In terms of an optimization of soft tissue or soft tissue management, for soft tissue surgery the 415 nm diode is recommended only with very strong caveats.

## _II. Microbiological Examinations With the Goal of Assessing the Eventual Quality Rating of the Device During Decontamination of Germ-Infested Tooth and Implant Surfaces

The concept of laser decontamination was coined in 1994 by the laser study group of Freiburg University (Krekeler, Bach and Mall) in the context of then newly established diode lasers. In the meantime, the concept of decontamination is used by many other authors in connection with other wavelengths. The decontamination with a laser describes the option to kill germs on teeth and implant surfaces with a laser, which are common during peri-implantitis and the marginal parodontopathy and to disable the endotoxins of those microorganisms. In 1994 Bach, Mall and Krekeler, Moritz in 1996 and Gutknecht in 1997 could demonstrate the diode laser effectively eradicates particularly the gram-negative, anaerobic germ spectrum of the quickly developing parodontopathy and the peri-implantitis, and assigned a higher significance for the efficient combat of those "problem germs" with the laser during the integration of approved treatment procedures for both illnesses. In 2000, for the first time, the aformentioned Freiburg study group presented a 5-year study "(Diode) Lasers in Periodontology".

The authors pointed demonstrated that by the integration of the diode laser decontamination in confirmed periodontitis and peri-implantitis procedures, the prospects for both of these clinical pictures, which formerly often took an unfavorable course can be considerably improved. Bach, Mall and Krekeler found a decrease of the recurrent rate of 33% after 60 months (control group not treated with laser) and of 11% (group treated with the support of a diode laser). After the hard diode laser decontamination had established itself as a factual domain for this wavelength, a further goal of this examination was to test the properties of the 415 nm prototype for this field as well. This potential possibility was first examined within the scope of microbiological growing compounds. A diode laser light in the 415 nm wavelength was applied to microbiological growing plates, which were flooded with the following germs spiked with the three-step smear procedure, in a further examination row:

a) actinobacillus actinomycetemcomitans (FR68/27-7)
b) prevotella intermedia (016/16-2)
c) porphyromonas gingivalis(W381 and FR68/27-2)

**Device Settings**

The following parameters were applied:

| Power: | Mode: |
|---|---|
| 0.45 watts | cw |
| 0.65 watts | cw |
| 0.70 watts | cw |
| 0.86 watts | cw |
| 0.99 watts | cw |

Application length: 30 seconds and 1 minute.


**Fig. 9**_ Microbiological Examinations for the Clarification of a Decontamination Effect.

### Microbiological Findings

The growing plates, spiked and irradiated with laser light were stored according to normal microbiological protocol; after 48, and 72 hours respectively, a "reading" was done. It could be determined that following a mere 30-second irradiation of the samples, no significant result in terms of limiting bacteria growth could be observed in any of the performance models. This is also true for the specimens undergoing one-minute laser light irradiation and settings of less than 0.70 watts. With the 0.86 and 0.9 watts settings, obstruction of germ growth could be observed in the prevotella intermedia. The zones had a radius of approx. 3 mm around the central irradiation area. Minor equivalent effects were observed with the a.a. and the p.g. In comparison to the results, which had already been documented in 1994/1995 using cw mode 810 nm diode lasers, the results are definitely more moderate.

### Bottom Line

The power setting of 0.9 watts in cw mode allows for a moderate decontaminating effect in the microbiological test. It is not yet clear if those results can be applied to a clinical environment. What can be said, though, is that the achievable in-vitro results with the introduced device do not correspond to the ones established with a diode laser (also with digital pulse technology). For laser light decontamination, the use of a 415 nm wavelength is therefore only possible within limitations.

## _Hardening of Composite Samples

For the ("blue") argon laser it is known that its laser light can harden dental composite filling material. Many authors point out that in comparison with lamp hardening, clearly better homogeneous joining of the composite materials is achieved. In support of those observations the "blue diode laser light" was tested in regards to its potential to possibility harden filling materials. 2 mm wide composite pieces (taken from a tube) were irradiated with a hard diode laser using 415 nm wavelength. In terms of a hardening of the respective samples, a clinical significant effect could not be achieved with settings under 0.6 watts and within a time frame of 1.5 minutes (which would be clinical but not relevant and acceptable), therefore the tests were aborted. With the 0.7/ 0.8 and 0.9 watt settings, hardening effects could be achieved, with 0.8 and 0.9 watts, however, with undesired effects on the composite surface in terms of (heat) bubbles and discolorations. With 0.7 watts, a hardening effect and at the same time undesired manifestations were achieved, which could have been avoided as described with the higher power settings. The hardening effect, however, was of a very superficial nature and was in the area of approx. 0.5 to 0.7 millimeters in the sample piece. Below it, the composite was in the same consistency, as though it was recently removed from the tube. Because of the already clinically evaluated results, a further (raster electronic microscope) analysis of cut samples was not taken into consideration.

## _Discussion

„Not everywhere where the word Diode is written, is also the same diode inside!"—striking but also to the point, one cannot phrase it as the quoted periodontologist and implantologist from Hanover. The diode laser dentistry completely suffers because at the moment three development stages of the injection laser are offered and promoted in the marketplace. For the ingenious, the multitude of offered diode laser devices is confusing indeed where some equipment is offered for the dental market, which because of their physical laser characteristics has very limited use in dentistry! Here, the introduced device and the wavelength of 415 nm (blue diode) fill a vacant position—the only possible use is in decontamination. Because of the experiences and indications with other devices, diode lasers with high power ratings and high-power and digital pulse technology can be mentioned here. In no way blue diodes can be recommended for use in soft tissues; here the bar is raised by the mentioned potent diode lasers and also by the other wavelengths—higher than the device ever can jump. The small size of the device gives some cause for enthusiasm—integration in a dental treatment unit can be realized with no problems—an old dream of laser users in their quest to move away from the (bulky) auxiliary unit. The results achieved with the introduced device, however, do not justify any of those considerations at the present time and the current stage of development of the device._

_contact implants

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# Er:YAG Laser and desensitizing effects on dentine and neck of tooth

**author**_ Olaf Oberhofer, Germany

## _Aim

The aim of this clinical study is to compare the desensitizing effects on dentin and tooth neck of Dentin protector (Ivoclar Vivadent, Ellwangen, Germany), Duraphat (Colgate, Hamburg, Germany) and Er:YAG Laser(KEY III, KaVo, Biberach, Germany). In private dental offices the dentin hypersensitivity since years is a common cause of discomfort in patients. Around 7 % of the patients in the dental office of the author shows this problem. Reasons for dentin exposure are gingival recession following periodontal disease or periodontal therapy and trauma from tooth brushing (Schwarz 2002). A successfull reduction of hypersensitivity over long period was not reported at all in literature. Dentine hypersensitivity is a common painful condition about which relatively little is known. A review of the literature reveals that most research has been concerned with the clinical assessment of therapeutic agents (Addy 1992).

About the etiology of dentin hypersensitivities is not much known (Addy 1990). The most common therapy of hypersensitive dentin is using fluorid solutions (Gedalia et al.1978) or iontophoresis with fluorid paste (Jensen 1965, Johnson et al. 1982). Since beginning of the 90´s using of laser systems has shown good results. In literature two different methods using laser in hypersensitivities are desribed: the indirect application is a therapy with laser combined with tin—fluorid application and the direct application of laserlight (Bach 2007, Moritz 2006). In history there were a number of studies using Nd:YAG Laser (Gutknecht et al. 1997, Gelskey et al. 1993), $CO_2$ Laser (Moritz et al. 1996), GaAlAs Laser (Matsumoto et al. 1985, Gerschmann et al. 1994) and Er:YAG Laser (Schwarz et al. 2002) about this problem. All the studies couldn´t show positive long term results.

## _Method

25 patients (11 females and 14 males, aged between 18 and 46 years, mean age 32 years) who shows a total of 172 contralateral pairs of hypersensitive and caries free teeth. There were no caries lesions on neighbouring or selected teeth, no desentizising therapy during the last 9 months and no cervical filling.

## _Study design

Split mouth design. Teeth in the first quadrant were treated with Dentin Protector (Ivoclar Vivadent, Ellwangen, Germany), in the second quadrant with Er:YAG Laser (KEY III, KaVo, Biberach,

60 mJ, 2 Hz, Handpiece 2060 defocused, two minutes per tooth), in the third quadrant with Duraphat (Colgate, Hamburg, Germany) and the fourth quadrant served as an untreated control group. All patients were member of the oral hygiene programme and received the last professional tooth cleaning four weeks before treatment. The assessment of sensitivity was accorded by an pain scale in four degrees (Table 1). The neighbour teeth were shielded by casting material (Panasil, Kettenbach, Eschenbach, Germany). A three second cold air blast (18–20 °C) in distance of 2 mm was the qualitatively stimulation on the side to be tested. The other test sides received application from Dentin Protector or Duraphat according to the instructions by the manufacturer. Before treatment the teeth has been cleaned by floss and polishing.

**Pain scale**

| Degree | Description |
|---|---|
| 1 | no discomfort during application of the stimulus |
| 2 | slight discomfort during application of the stimulus |
| 3 | mild discomfort or pain during application of the stimulus |
| 4 | severe discomfort or pain during and continuing for longer than five seconds after application of the stimulus |

**Table 1**

Recording were assessed before treatment, immediately after, one week, one month, two months and six months after treatment by a blinded examiner.

## _Results

No complications were observed. All treatment forms resulted in improvements of discomfort immediately and after one week. After one month examination the DP group increased up to 56 % and the Duraphat group increased up to 57 %, the Laser group increased up to 42 % of the baseline score. After two month examination the DP group increased up to 64 %, the Duraphat group increased up to 68 % and the Laser group stayed nearly unchanged at 42 % of the baseline score.

After six month examination the DP group increased up to 102 %, the Duraphat group increased up to 103 % and the Laser group slightly increased up to 55 % of the baseline score. The control group shows no improvement of discomfort all six months.

**Mean degree of pain over 6 months (n = 25)**

| | before | after | 1 week | 1 month | 2 months | 6 months |
|---|---|---|---|---|---|---|
| **Er:YAG Laser** | 3,52 | 1,36 | 1,48 | 1,52 | 1,52 | 1,96 |
| **DentinProtector** | 3,6 | 1,6 | 1,96 | 2,04 | 2,32 | 3,68 |
| **Duraphat** | 3,6 | 1,64 | 2,16 | 2,08 | 2,48 | 3,71 |
| **Control** | 3,6 | 3,56 | 3,52 | 3,36 | 3,52 | 3,68 |

**Table 2**

Compared to the control group all three treatment method showed reductions of discomfort all six month. The decrease of the positive effect with Er:YAG Laser has been shown after six months, the decrease of the positive effect of DentinProtector and Duraphat has been shown after two months. Desensitizing with Er:YAG Laser (KEY III, KaVo, Biberach, Germany) was effective. In comparison to the use of Duraphat (Colgate, Hamburg, Germany) and Dentin Protector (Ivoclar Vivadent, Ellwangen, Germany) the maintenance of the results was longer.

After six months there was a slightly increasing of discomfort in the Er:YAG laser group too. It seems that the Er:YAG laser is an suitable tool for treatment of dentine hypersensitivity. Further studies are needed over a long time period to evaluate long term stability of the positive results._

*For literature, please contact the author.*

_contact implants

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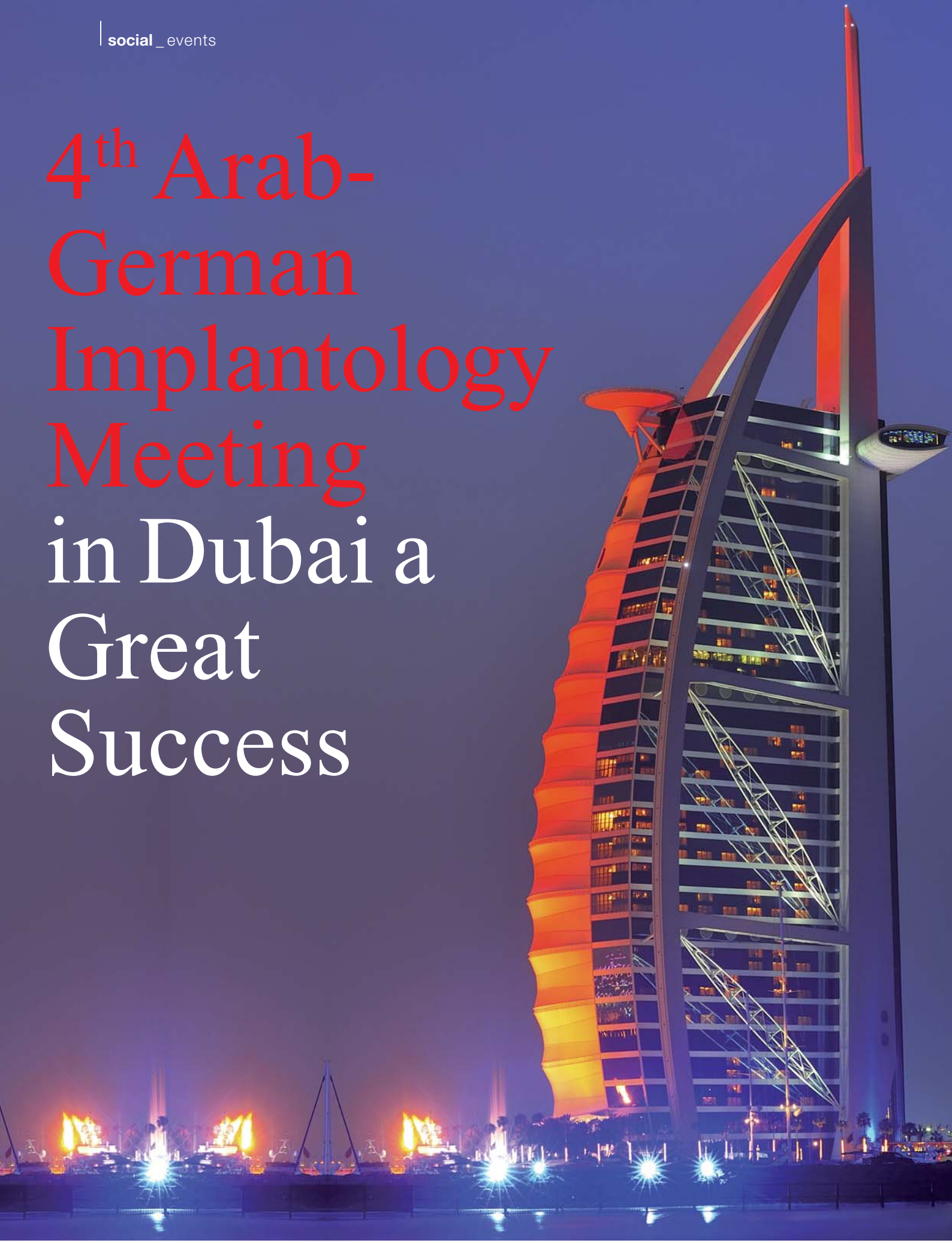
# 4th Arab-German Implantology Meeting in Dubai a Great Success



**_On March 7–8, 2008,** implantologists from all over the world gathered after the AEEDC, one of the largest dental exhibitions in the Middle East, to learn about the newest trends and innovations in dental implantology on the occasion of the 4th DGZI Arab-German Implantology Meeting. About 100 colleagues came from Iraq alone and had booked a charter flight to Dubai. The second-most represented country was the Sudan, where the DGZI also boasts a respectable membership. Colleagues from over 20 countries—including from Japan and the US—traveled to this renowned implantology event in the Middle East. The congress was opened by Dr Mazen Tamimi, President of the DGZI International Section, the Deputy Chairman of the Chamber of Dentists of the United Arab Emirates and Dr Rolf Vollmer, who were both responsible for the scientific leadership of the congress. Dr Roland Hille and Dr Rainer Valentin led the moderation and discussion. After the opening ceremony, Dr Mazen Tamimi reported on the various DGZI educational programs, which now also enable international colleagues to earn a master's degree. Dr Jack Hahn from the US reported on immediate implantation and immediate loading. Dr Dr Wolfgang Hörster illustrated quite impressively that augmentation can also be done in the planning stages of an implantation with the aid of a computer. Dr Nabil Barakat from Lebanon discussed how ultrasound technology can improve external sinus lift procedures. A similar topic regarding the application areas of ultrasound waves was presented by Dr Angelo Troedhahn from Austria, who participated in the Implantology Meeting in Dubai as Chairman of the IAUSI—a partner association of the DGZI. Dr Walid Sadeq, DGZI Representative in Saudi Arabia, illustrated the various retention options of implant-supported overdentures and expanded on the various possibilities of fixating them with diverse connecting elements. Prof. Sherine Attar



discussed the topic of immediate loading and Dr Fatta from Egypt focused on implants in vascularized bone transplants. Dr Joachim Eifert from Germany presented CAD/CAM manufactured supraconstructions made of titanium and zircon dioxide. Nicole Geha, who has been represented several times at DGZI annual congresses in the past, addressed the anatomy of the front lower jaw and the question of whether this is an absolutely safe zone. Dr Achim Schmidt from Munich, Germany, presented the biological complications that can occur with dental implants and described the diagnosis, prevention and treatment of the same. Dr El Gazaz from Egypt presented an implantation study conducted with diabetics. Dr Werner Stermann described the treatment and complications that can occur in the upper jaw as well as its prosthetic reconstruction. Dr Iyad Ghoneim, DGZI Representative from Syria, presented a new implant bed preparation technique. Dr Nadim Abou Joude addressed implant-supported prosthetics in maxillofacial deformities. Dr Walid Odeh from Jordan reported on mini-implants in orthodontia, which could be a sen-




sible alternative and remedy in orthodontic treatments. The Lunch & Learn Session during the lunch hour was especially popular. This, for participants free of charge, table discussion—a new feature of the meeting—gave colleagues the opportunity to discuss special topics with the presenters such as bone augmentation, computer-supported navigation, CAD/CAM technology and sinus lift procedures. Additionally, a meeting of the DGZI Representatives as well as the Presidents of the Chambers of Dentists from the region took place on the occasion of the congress. Educational concepts for the future were discussed during this meeting and there was consensus that standardized concepts should be established which should, among other things, be oriented to Saudi Arabia's standards, as this country is playing a pioneering role in the region in this respect. The participants were in agreement that the 4th DGZI Arab-German Meeting Dubai 2008 was a great success and that this success should be repeated next year at the 5th Arab-German Implantology Meeting. The specific date and location will be announced well in advance._



concepts for predictability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DGZI

# 4th Arab-German Implantology Meeting of DGZI

## Selection of Abstracts

### Immediate Extraction Replacements: Principals to ensure success

_ Dr Jack Hahn, USA

#### _Abstract

Dr Hahn has been performing, immediate placement of implants after extraction in his practice for over thirty years. He has been involved in various long term clinical studies on this procedure. A fourteen year in function study reports 96,7% survival. The presentation clearly showed principals of surgical placement, provisionalization and final restoration that must be followed to ensure long term success. Many patients in your practice present themselves with teeth in the esthetic zone that are not restorable. Offering immediate replacement with a provisional restoration in sure to add the "WOW" effect to your practice.

### Augmentative pre-implant measures using computer-assisted planning

_ Dr Dr Wolfgang Hörster,
Dr Dr Michael Holschbach, Germany

Dr Dr Wolfgang Hörster

#### _Abstract

Neither an OPG and model analysis nor a clinical evaluation provide sufficient grounds and certainty to determine the requirement or even the need to carry out pre-implant augmentative measures. For such cases, a computer-assisted evaluation of the available bone volume can give important information for all aspects of the treatment.

#### _Material & Method

In cases of extensive vertical and sagittal bone loss, computer-assisted planning could be used to define the absolute necessity of augmentative measures prior to the insertion of an implant. It is possible to define both the extent of the augmentative measures and the most favourable harvest sites.

#### _Results

Computer-assisted planning facilitates the process of determining the scope and volume of the hard tissue to be replaced.

#### _Discussion

The scope of augmentation is clearly defined and the post-augmentative, computer-assisted representation of the improved bone bed represents a significant advance for dental implantology.

#### _Summary

Computer-assisted planning of augmentative measures is a valuable addition to pre-operative diagnostics in the treatment of difficult implantological cases.

### Maximum implant treatment with different implant systems— A five year retrospective study

_ Dr Milan Michalides, Germany

#### _Abstract

The lecturing will show the long term success of fixed suprastructures on mutiple implants. It is to be shown, if the long term success of fixed bridges is related to different implant systems. We will show, that multiple implant placement does work with almost any implant system, no matter how many implants used. The more implants beeing used, the more care should be taken on certain factors. You will see different solutions for fixs suprastructures in full-mouth rehabilitations.

## Short Implants, why and when?

_ Dr Jihad Abdallah, Lebanon


### _Abstract

Availability of alveolar bone can limit implant placement anatomically especially in the posterior regions of the maxilla and mandible, due to less bone height, less bone density, higher occlusal forces and presence of vital structures. In these situations, the surgeon may employ bone augmentation procedures which result in higher costs, greater morbidity, longer treatment times and more psychological trauma to patients due to additional surgical procedures with their possible complications and pain.

Another possibility for addressing such borderline situations with more patients' acceptance involves the use of short implants.

Short implants have been associated with lower predictability in many screw-type implant studies.

However, with short implants having plateau design high success rates are achieved.

In this presentation the biomechanical properties of this short implant were discussed in greater depth. These will include:

_ Fin or plateau root form design
_ Sloping shoulder (first switched platform designed 1985)
_ 1.5° locking taper leading to a bacterially-sealed implant to abutment connection.


## The combined tooth-implant-supported fixed partial denture—a treatment option in the partially edentulous jaw?

_ Dr Arne F. Boeckler, Germany


### _Abstract

Fixed dental prostheses are often preferred to removable dental prostheses for functional and psychological reasons. Since the 1980´s combined tooth-implant-supported fixed partial dentures are an alternative treatment option to implant supported restorations for the rehabilitation of the posterior partially edentulous jaw. Combined use of implant and natural teeth to support fixed prostheses may improve tactile sensibility and preserve tactile reflexes. Moreover, as a result of fewer implants being placed, the surgical as well as the financial impact of treatment are reduced. But the combination of natural abutment teeth in tooth and implant supported restorations remains controversial. This is the result of variations in movement during function observed between healthy teeth supported by a periodontal ligament and osseointegrated implants supported by bone.

The mobility of teeth rigidly connected to implant may therefore be reduced, or conversely the increased mobility of natural tooth abutments may result in increased functional demand on the implant, and on the implant supported regions of the prostheses.

These factors may result in several complications including implant fracture, abutment or retaining screw fracture, prosthesis fracture, loss of retention, intrusion of the natural tooth abutments, marginal bone loss and loss of osseointegration.

But also caries, periodontal disease, and peri-implant inflammation caused by deficient marginal fit are reasons for clinical failure of combined tooth-implant-supported fixed partial dentures. This lecture will give an overview about the benefits and problems related to tooth-implant-supported fixed partial dentures. Also results of recent research and guidelines for evidence based clinical decisions will be presented.


## Biological Complications with Dental Implants. Their Prevention, Diagnosis and Treatment

_ Dr Achim Schmidt, MSc., Germany


### _Abstract

Orodental rehabilitation through the use of implants offers very high success rates. In this presentation, I described some of the complications involved with this technique, such as periimplant disease which there is a loss of the bony support of the implant accompanied by inflammation. Treatment will differ depending upon whether it is a case of mucositis or periimplantitis. Therapeutic objectives focus on correcting technical defects by means of surgery and decontamination techniques. Different techniques either conservative or surgical procedures are demonstrated.

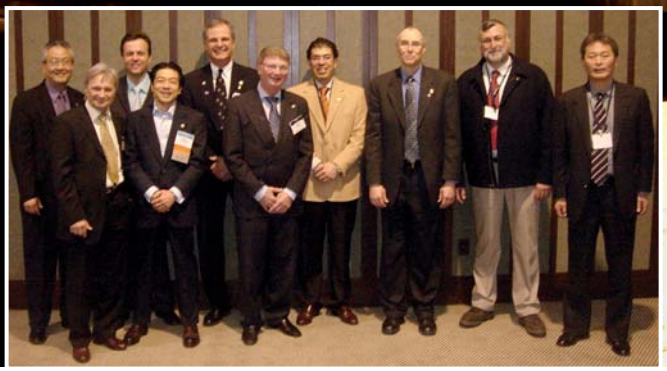
The presentation showed different techniques of periimplantitis therapies and methods to improve the soft-tissue conditions in the periimplant area in order to prevent these complications._


**_info** implants

We will continue the publication of the abstracts in the next issue of implants.

# DGZI and AO Boards of Directors Met in Boston

## The annual conference of the AO – Academy of Osseointegration – was a great success





**_On the occasion** of this year's conference of the large US professional association "AO—Academy of Osseointegration" from February 28 to March 2, representatives of the DGZI and the AO convened at a top meeting. The relationship between the two associations has a long-standing tradition. For quite some time, the annual conferences of both associations have been the venue for an intensive knowledge transfer and exchange of lecturers. Under the leadership of DGZI President Dr Friedhelm Heinemann, First Vice President and Treasurer Dr Rolf Vollmer, Board Member for Organization Dr Rainer Valentin and Executive Director and DGZI Public Relations Officer Dr Torsten Hartmann all attended the meeting in Boston from DGZI's side. Former President and AO Board Member Dr Ed Sevetz, who maintains a very personal relationship to the DGZI and its Board of Directors, stressed how important it is to continually hold discussions with friends and colleagues from all over the world and to talk about association questions as well as strategic topics. During the "International Meeting," which has become a tradition and which was also attended by representatives of other leading international professional associations, the intensive discussion included topics such as the recognition of foreign qualifications, the future process of knowledge transfer and lecturer exchange. Representatives from Great Britain, South Africa and Australia participated in this meeting. President Dr Steven Eckert and President-Elect Dr Steven Lewis thanked DGZI President Dr Heinemann and his colleagues for attending and ensured that the good relations between the AO and DGZI would remain an important component of the association's work in the future. More than 3,000 participants attended the AO meeting in Boston with its comprehensive and multifaceted scientific program. This makes the annual AO Conference one of the leading international implantological events._


# 2nd International King Abdulaziz University & 19th Saudi Dental Society Conference for Dental Technology and Research in March 2008

## Cooperation Agreement between DGZI and Saudi Dental Society

**_The City of Jeddah hosted** this year the international dental community from 10th to 12th of March. Jeddah is the second largest city in Saudi Arabia, and it is the main gate to the two holy mosques of the Islamic world in Mecca. Jeddah is also considered the bride of the red sea. Under the patronage of his Royal Highness Prince Mash´al Bin Majed, the SDS congress was honored and privileged to have his Royal Highness attending the opening ceremony in attendance of more than 1,000 dentists, specialties, laboratory technicians, dental students and representatives from world leading associations, which made this event one of the most important dental gatherings of the region this year. DGZI (German Association of Dental Implantology) was represented by its Vice President Dr Rolf Vollmer (Germany) and the President of the International Section Dr Mazen Tamimi (Jordan). The congress provided a forum for dialogue, education, advancement and improvement of all aspects of dental specialities. Prof. Yousef F. Talic—President of the Saudi Dental Society—in his opening speech emphasized the importance and the professional development of education with national and international renowned speakers in the field of latest dental technologies. Prof. Talic promised even more dynamism in the future which subsequently was finalized in an agreement between DGZI (German Association of Dental Implantology) and Saudi Dental Society according to the specific situation in Saudi Arabia. The Saudi Dental Society is a scientific organ-


ization dedicated to general and specialized dentistry. Saudi Dental Society represents more than 8,000 working dentists of more than 75 different nationalities from all over the world. In order to advance implant dentistry and scientific and technological transfer, Saudi Dental Society and DGZI have agreed to cooperate under the provisions of an cooperation agreement.

The objectives of that cooperation are

_ the advancement of science and research in the area of implant dentistry through mutual transfer of knowledge about latest scientific developments and technologies;
_ the promotion of further development of dentists through specialization in the area of implant dentistry, and this particularly by congresses, workshops, an exchange of experts for congresses, colloquiums or by comparable events;
_ enabling cooperating memberships for all members of the cooperating partners;
_ events of joint congresses;
_ cooperation in scientific projects;
_ the exchange of professional magazines
_ mutual acceptance and accreditation of certificates of qualification and other certifications.

Additionally an Agreement was signed to launch the GBOI (German Board of Oral Implantology) in the Kingdom of Saudi Arabia to get the accreditation of the Saudi Council for Health Specialities to train the local dentists to be qualified on International standards. This should enable the dentists to perform Oral Implantology on a safe scale and to be eligible for continuing post graduate education to go for MSc. in Oral Implantology. All the guests enjoyed their stay in Jeddah and praised the efforts of the organization committee and the productive meeting and the agreements._

# Selected Events 2008/2009

## MAY 2008

| | | | |
|---|---|---|---|
| May 23–24 | *15th Starters Congress in Implantology / 9th Spring Meeting of DGZI* | Ulm, Germany | Phone: +49-3 41/4 84 74-3 08<br>Fax: +49-3 41/4 84 74-3 90<br>Web: www.oemus.com |

## JUNE 2008

| | | | |
|---|---|---|---|
| June 5–8 | *SINO Dental* | Peking, China | Web: www.sinodent.com.cn/eng/ |
| June 19–21 | *International Congress of Aesthetic Surgery and Cosmetic Dentistry* | Lindau, Germany | Phone: +49-3 41/4 84 74-3 08<br>Fax: +49-3 41/4 84 74-3 90<br>Web: www.oemus.com |

## SEPTEMBER 2008

| | | | |
|---|---|---|---|
| September 5–6 | *5th Forum of Innovations in Dentistry* | Leipzig, Germany | Web: www.fiz-leipzig.de |
| September 24–27 | *FDI Annual World Dental Congress* | Stockholm, Sweden | Web: www.fdiworldental.org |

## OCTOBER 2008

| | | | |
|---|---|---|---|
| October 10–11 | *38th International Congress of DGZI* | Bremen, Germany | Phone: +49-3 41/4 84 74-3 08<br>Fax: +49-3 41/4 84 74-3 90<br>Web: www.oemus.com |
| October 29–November 2 | *AAID 57th Annual Meeting* | San Diego, California | Web: www.aaid.com |

## NOVEMBER 2008

| | | | |
|---|---|---|---|
| November 28–December 3 | *GNYDM Greater New York Dental Meeting* | New York, USA | Web: www.gnydm.com |

## NOVEMBER 2009

| | | | |
|---|---|---|---|
| November 4–7 | *AOS 7th Biennial Conference* | Queensland, Australia | Web: www.aos.org.au |




# MARCH/APRIL 2008

### 80th Birthday
Dr Nurdogan Gökaydin (29.03.)
Dr Siegfried Riedel (01.04.)
Hans-Henning Bieg (20.04.)

### 75th Birthday
Dr Paul Poput (20.03.)

### 70th Birthday
Dr Dieter Boemke (12.03.)
Dr Edgar Grünwald (04.04.)

### 65th Birthday
Dr Friedrich Kieltsch (26.03.)
Dr Wilhelm Fiebig (07.04.)
Dr Dr Sevim Meric (19.04.)

### 60th Birthday
Dr Hans-Dieter Beyer (02.03.)
Dr Ernst Kettel (02.03.)
Dr Herbert Fuhrmann (20.03.)
Dr Izhak Galfsky (24.03.)
Dr Horst-Dankward Heinenberg (28.03.)
Dr Dusan Vasiljevic (28.03.)
Dr Rudolf Linke (26.04.)

### 55th Birthday
Dr Klaus Petersmann (04.03.)
Dr Stefan Basch (13.03.)
Dr Joseph Fish (20.03.)
Dr Sven Eichler (23.03.)
Dr Rady George Elias (02.04.)
Dr Rudolf Brinkhaus (12.04.)
Dr Reiner Schnabel (30.04.)

### 50th Birthday
Dr Ulrich Wild (03.03.)
Dr Chrizdana Hadjieva (11.03.)
Dr Helmut Finster (12.03.)
Dr M.Sc. Hans Werner Fromme (14.03.)
Dr Till Kötter (17.03.)
Dr Jürgen Schneekloth (18.03.)
Dr Ursula Schmitt (23.03.)
Dr Thilo Stumpf (30.03.)
Dr Stefan Striegler (05.04.)
Dipl. dent. Andreas Runewitz (08.04.)
Dr Doru Negrea (14.04.)
Dr Martin Lensch (22.04.)

### 45th Birthday
Dr Achim Sieper (01.03.)
Ulrich Bagert (09.03.)
Dr Bernhard Allgeyer (12.03.)
Thomas-Polykarp Schilasky (13.03.)
Dr Arne Cuppen (23.03.)
Dr Igor Modric (23.03.)
Christian Kornberg (25.03.)
Dr Florian Mitterwald (31.03.)
Dr Dr. Bijan Zahedi (01.04.)
Dr Ralf-Werner Fichna (10.04.)
Dr Allababidi Abdulmuhti (11.04.)

### 40th Birthday
Dr Ivan Opanasiuk (02.03.)
Dr Volker A. Menzel (05.03.)
Dr Christian Rüffler (06.03.)
Michael Mielke (14.03.)
Dr Bassem Lufti (26.03.)
Dr Rudolf Reil (29.03.)
Dr Saeed Abbasi (30.03.)
Dr Frank Grulich (05.04.)
Dr Peter Keller (11.04.)
Dr Dr Stefan Schermer (17.04.)
Dr Frank-Jörg Ulmer (23.04.)
Dr Peter Lintzen (26.04.)

# MAY 2008

### 70th Birthday
Dr Axel Wesche (17.05.)

### 65th Birthday
Dr Ute Henriot (01.05.)
Dr Raimund Haske (24.05.)
Dr Karl Frischmann (31.05.)

### 60th Birthday
Dr Dr Steffen Gerhard Köhler (01.05.)
Dr Gordan Ristic (10.05.)
Dr Jehuda Jakubowicz (15.05.)
Dr Kurt Mayer (22.05.)
ZA Walter Möller (22.05.)
Dr Erhard Panne (24.05.)
Dr Achim R. Wöhrle (29.05.)

### 55th Birthday
Dr Ali Keschtidar (02.05.)
Ursula Herzog (17.05.)
ZA Michael Wahner (20.05.)
Dr Eduardo Topete (30.05.)

### 50th Birthday
Dr Dirk Lotz (06.05.)
ZA Norbert Bauer (14.05.)
Dr Ulrich Schmiedeknecht (22.05.)
Dr Dirk Viehmann (23.05.)
ZTM Jürgen Stentenbach (28.05.)
Dr Thomas Schweisgut (29.05.)
Dr Roland Steckel (30.05.)
Dr Christoph Sliwowski (31.05.)

### 45th Birthday
ZA Michael Schönfeld (01.05.)
Dr Christian Derdau (03.05.)
Dr Gerd Hermann Volland (09.05.)
Dr Ali Asswd (12.05.)
Dr Tom Böse (14.05.)
Ute Müller-Ickenroth (16.05.)
Dr Ralf Wimberger (24.05.)

### 40th Birthday
Dr Mahmoud Al Bargouthi (02.05.)
Dr Per-Olov Östman (04.05.)
Dr Jafar Hamam
Dr Tobias Ruder (22.05.)

# JUNE 2008

### 75th Birthday
Dr Herbert Schmits (10.06.)

### 60th Birthday
Dr Heiner Jacoby (01.06.)
Dr Bernd Wollberg (02.06.)
Dr Hermann Meyer (30.06.)

### 55th Birthday
Dr Gabriele Parusel (08.06.)
Dr Michael Kögel (13.06.)
Dr Friedhelm Geigis (24.06.)
Dr Marius Mitrenca (28.06.)

### 50th Birthday
Dr Rolf Mohring (01.06.)
Dr Rüdiger Oesterheld (07.06.)
Dr Dr. Martin Kirstein (10.06.)
Dr Hans-Peter Männer (18.06.)
Dr Jens-Joachim Paarsch (19.06.)
Prof. Dr Amr Abdel Azim (19.06.)
Dr Yasunori Matsumoto (21.06.)
Kevin Paul Murphy (23.06.)
Dr Reinhard Niestroj (30.06.)

### 45th Birthday
Dr Andreas Hordt (01.06.)
Dr Petra Lüttich (15.06.)
ZA Ralf Jorzik (23.06.)

### 40th Birthday
Dr Hans-Jürgen Weh (02.06.)
Dr Marcus Schifferdecker (03.06.)
Sabine Behrens (08.06.)
Dr Daniela Kübbeler (13.06.)
Dr Thomas Schindlmayr (15.06.)

# Manufacturer News

Friadent

## The new, global DENTSPLY Friadent Web site is now online


DENTSPLY Friadent, the implant division of DENTSPLY, the world leader in dentistry, now has a completely redesigned Web site with a unified global presence at www.dentsply-friadent.com. The new Web site has a completely revised structure and conforms to the new, attractive DENTSPLY Friadent corporate design. The new site offers comprehensive information for dentists, dental technicians and patients in five languages. The easily navigated, simple user interface gives users a number of new tools.

**The focus at DENTSPLY Friadent is on users and patients**

The home page has been given a fresh, modern design and the latest news can be found on the starting page. The navigation bar gives easy access to Products & Services, Patients, Company, Events and Contact. Persons wanting to contact the company can find telephone numbers and addresses of contact persons at a glance.

"The completely redesigned home page offers our customers additional features that add significant value, and the multilingual pages emphasize that we are a leading company that operates all over the world," stated DENTSPLY Friadent Marketing Director Birgit Dillmann. The new Web site is available in English, French, Spanish, Italian and German, making it a genuine part of the World Wide Web. Additional languages will be added over time. Customers can use the navigation bar to enter the color-coded world of DENTSPLY Friadent products. They will find comprehensive information on all products along with brochures and catalogs, which can be downloaded as PDF files. The option of changing font sizes makes the text easily readable even for older patients whose sight may not be the best.

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Dr. Ihde Dental

## Xign®—the new dental implant by Dr. Ihde Dental

Safe osseointegration and excellent aesthetic results at a very reasonable price – these are the most important benefits of the new Xign® dental implant system by Dr. Ihde Dental. The system features numerous innovations and improvements such as a well-differentiated thread design, a hot-etched surface that result in a firm connection with the restorative superstructure at the bone level. Its special design makes Xing® easy to place in the cortical bone. The self-cutting implant is inserted into a slightly underdimensioned bony implant bed, resulting in controlled compression of the surrounding bone, which ensures high primary implant stability even in soft bone. Depending on the specific indications and circumstances, Xign® is often suitable for immediate insertion and loading. The design of the implant and its special hot-etched surface ensure rapid and successful integration. The strength of the connection between the implant and its superstructure is the key to long-lasting treatment success. Xign® ensures this in two different ways: First of all, Xign® employs an internal hex connector, a clinically proven feature for many decades. Secondly, the implant-superstructure connection is effected at bone level, supporting long-term aesthetic soft-tissue results that satisfy the expectations of the most demanding dentists and patients. The Xign® product line is very comprehensive when it comes to accessories; it includes various titanium and zirconia abutments, shaping drills, cortical cutters, placement aids, bone taps and a specially designed and very practical tray. Xign® is currently available in two different diameters (3.8 and 4.5 mm) and four different lengths (8, 10, 13 and 15 mm). A 3.4-diameter version will be added this summer.

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Oraltronics

## Oraltronics Dental Implant Technology GmbH changed into Sybron Implant Solutions GmbH

On February 25, 2008, the Oraltronics Dental Implant Technology GmbH received a new name: Sybron Implant Solutions GmbH. With this move, we are approaching the corporate design of our U.S. parent company Sybron Dental Specialties. The new corporate name does not have any effects on the business. Dr. Gregg Cox and Gerald Hellmers continue to be responsible as managing directors. The new name will change the corporate design of our company. Along with the new logo, the company will appear with a new image in public. In addition, Sybron Implant Solutions are announcing a number of interesting product innovations for the current year. Originally established as Oraltronics Marketing und Vertriebs GmbH in 1979 in Bremen, the globally active American Sybron Dental Specialties group took charge in 2005. Today, the company is enjoying one of the leading positions in the development and manufacture of complete system solutions for oral implantology and is represented in 80 countries worldwide. The product portfolio with the implant systems Pitt-Easy, Bicortical and Endopore contains a complete concept for application in oral implantology in the dental practice. Innovative materials for augmentation procedures are supplementing the implant program

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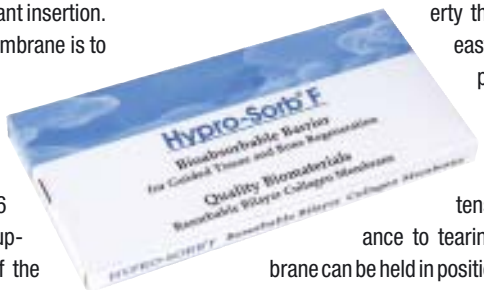
DOT

## Guided Tissue Regeneration in Dental Surgery

Guided tissue regeneration (GTR) has nowadays become an essential therapeutic procedure not only for the treatment of peridontal bone defects but also for bone and peri-implant defects and for augmentation procedures prior to implant insertion.
A basic function of a membrane is to prevent the immigration of soft tissue cells, e.g. fibroblasts, into the bone defect during a time period of nearly 6 months and hence to support the regeneration of the new bone tissue. The collagen membrane Hypro-Sorb® F is a resorbable bilayer membrane for guided tissue and bone regeneration (GTR/GBR). Hypro-Sorb® F consists of collagen type-I. Due to the removal of telopeptides the membrane possesses a very high degree of biocompatibility, associated with good wound healing properties. A special production process generates a bilayer structure with a smooth and a rough layer. While the smooth layer supports the healing of the soft tissue, osteoblasts and osteoblast-precursor cells use the disordered structure of the collagen fibres on the rough side to infiltrate into the porous structures and initiate the formation of new bone tissue. Research findings have shown that under the application of the membrane the ingrowth of epithelial cells or fibroblasts into the bone defect was impeded. Therefore the bone tissue has enough time for regeneration, whether alone or in combination with a suitable augmentation material. Due to the hydrophilic property the membrane shows an easy handling as well as a perfect adaptation to the defect. The arrangement of the collagen fibers results in a great tensile strength and resistance to tearing. Therefore the membrane can be held in position by sutures or pins. The barrier function of the membrane is sufficiently long and the membrane is completely bioresorbed after approx. 6 months. Therefore a second surgical intervention for removal of the membrane is not required.

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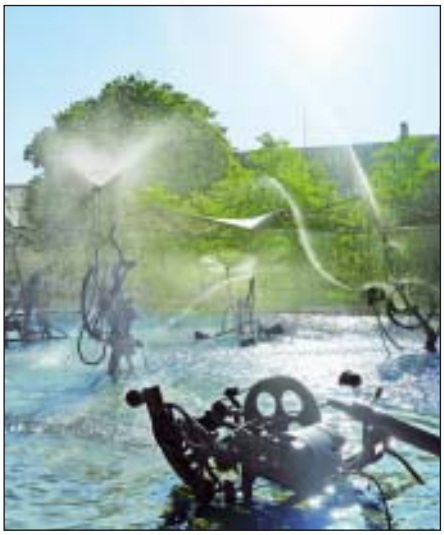
Camlog

## International CAMLOG Congress 2008

From May 9–10, professionals from clinics, dental offices and dental laboratories from more than 20 countries meet in the Congress Center Basel, Switzerland, for the CAMLOG Congress 2008. Guided by the theme: "Science meets practice—practice mets science", a faculty of world-wide renowned speakers presented the current state of implant dentistry in its entire scope. In the course of the CAMLOG Congress 2008, Prof. Rolf Ewers, President of the CAMLOG foundation, also introduced and launched the camlog foundation Research Award Competition 2009. This Research



Award Competition provides a scientific platform for systematically communicating with promising future leaders in the specialty thus developing mutually beneficial relationships. In the Congress poster competition, high-quality research results, clinical and clinical case studies and dental laboratory case documentations of practical interest in the field of implant dentistry were presented.
More about the 2nd International CAMLOG Congress you can read in the next issue of implants. Please visit: www.camlogfoundation.org

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Straumann

## Straumann acquires Czech distributor Ormedent spol. s r.o.

Straumann, a global leader in implant, restorative and regenerative dentistry, has acquired Ormedent spol. s r.o., the exclusive distributor of Straumann products and services in the Czech Republic and Slovakia. The acquisition provides Straumann with its own local subsidiary and direct access to customers in a further attractive emerging market in Eastern Europe. The purchase price was not disclosed.
Based in Prague, Ormedent enjoys a leading position in the Czech Republic as a distributor of products and services for implant dentistry and oral tissue regeneration.
With Straumann as its exclusive partner in these fields since 1999, the company has successfully established the Straumann Dental Implant System as the system of choice among Czech implantologists and dental professionals. Ormedent's small but efficient sales team, which also serves the Slovakian market, will transfer to Straumann together with the management. Franz Maier, Head of Global Sales and Member of Straumann's Executive Management Board, commented: "Ormedent is an excellently run company that has consistently generated good sales growth over the past years. We are delighted that the team will continue with us to serve customers and their patients in the Czech Republic and Slovakia."
With a population of 10.3 million served by approximately 7,000 active dentists, the Czech Republic is one of several attractive emerging markets in Eastern Europe, where Straumann is strengthening its presence. Shorty before the Group announced a similar strategic move with the opening of a branch office in Hungary. Today, Straumann is present in more than 60 countries worldwide, and generates approximately 95% of its total revenues directly, with the remainder coming through distributors

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NSK

## NSK Europe move into their new European Head Office

The waiting is finally over! On March 17, NSK Europe Ltd. will move into their new European head office in Eschborn, a suburb of Frankfurt/Main. Since the opening of the German office in 2003, their old premises have proved to be insufficient for the needs of the continually growing company. To be able to keep up with the growing demand for NSK's products in the future, NSK began to build their new European head office in May 2007. Eiichi Nakanishi, president and director of NSK Europe Ltd, came to Frankfurt himself to break ground on the site of the new building. The new company building is particularly impressive because of its state-of-the-art design and facilities. Moreover, it stands out for its centrality and attractive locality, nearby the city centre

and the airport. The new European Central Stock Centre (ECSC) will be able to fulfil NSK's high demands for excellent performance and quality: It has a larger stock at hand, and it has the logistic background and distribution technologies to serve all their customers and NSK's branches. In this way they optimise their global service network, which already covers more than 120 countries, and prove that they are Europe's leading service and distribution centre.
By building the new ECSC, NSK have not only decided to move to a new location but also into an even more successful future.

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KaVo

## KaVo INTRAsurg 1000: Excellence in Implantology

The INTRAsurg 1000 provides the user with a total of 10 programmes, each with up to 10 steps, so that even complex treatment procedures can also be reliably programmed. Each programme can be individually named and parameters such as torque, speed, speed reduction, amount of cooling, motor rotational direction and connection, all are able to be specifically adjusted for the operator. Clinically relevant data can be transmitted to other programmes and added to the patient's data base.

INTRAsurg 1000 can be additionally equipped with an optional air connection with multiflex coupling so that, for example, oscillating bone preparation can be carried out by using the new SONICflex bone tips. By combining the advantages of rotating and oscillating technologies, the operator can achieve shorter treatment times with a simultaneous reduction of risk and trauma for the patient.

Two implantology contra-angle handpieces with light are now available to the operator. Together with the proven 27:1 speed reduction, a new 12:1 speed reduction handpiece is also available. Additionally a handpiece with a 1:1 direct drive gearbox ratio is available.

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J. Morita Europe

## Veraviewepocs 2D: diagnostic support with crystal-clear digital images

J. Morita Europe has expanded its range of products by adding a modular design X-ray device, the Veraviewepocs 2D, which can be used both for panoramic as well as cephalometric imaging. The results are razor-sharp, high-resolution digital pictures in a variety of magnifications and projection angles which provide a significantly improved basis for orthodontic and dental diagnostics. One factor contributing to the contrast-rich picture quality is the reduced pixel size of 48 µm. In addition, the relatively short exposure times, for example 4.9 seconds for a cephalometric scan, also mean tangibly reduced radiation dosages for the patients. Another plus point of the Veraviewepocs 2D is its high degree of automation. The integrated auto-focus makes its easier for operators to position patients precisely. Additional procedures such as a permanent digital direct automatic exposure (DDAE) and automatic image enhancement (AIE), also permit more precise detail recognition. Diagnosis can also be supported by an add-on, 3-D function module.

New flexibility: The Veraviewepocs 2D for panorama cephalometric images.

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Acteon

## Sensational new piezo procedure for bone augmentation

"Plug and Spray": The keyhole revolution in sinus elevation! A precisely-defined sinus lift with bone augmentation without swelling, pain or bleeding. The new Intralift method for the ultrasonic generator Piezotome and the ImplantCenter from Satelec® (Acteon Group) now enables dentists to lift the maxillary sinus membrane, by the crestal approach, gently and safely, and fill the new sinus space with augmentation material—with less room for mistakes and low rupture risk, thanks to the five new unique TKW instruments. Designed for ultrasonic drilling and Schneider membrane elevation by hydrodynamic effect, the augmentation material is then inserted into the osteotomy and compacted. The revolutionary Intralift procedure thus combines for the first time the safety, effectiveness and visibility of an external sinus lift with the minimally-invasive internal sinus lift. The scope for use of piezoelectric ultrasound technology is constantly increasing. It is therefore not only suitable for prophylaxis, endodontics and periodontics. Oral surgeons can also benefit more and more from the adjustable frequency and the technically-ingenious tips. With Intralift, Satelec has now introduced a completely new, minimally-invasive operational method for internal sinus elevation and bone augmentation.

**Minimally-invasive procedure with minimal risk of errors**

The particularity of this procedure: five specific TKW instruments (according to Drs Troedhan/Kurrek/Wainwright) which enable, for the first time, the hydrodynamic separation of the Schneider membrane, by means of the modulated surgical mode and irrigation from the ultrasonic generator.

Here, the new ultrasound-based Intralift method is not only the least invasive operational procedure currently available, but it is also the fastest and safest operational procedure for an internal sinus lift and pre-implant bone augmentation. Furthermore, it is just as effective as the classic lateral window technique.

In the case of an upper residual bone height of less than five millimeters, bone augmentation should be carried out after raising the maxillary sinus membrane for an implant placement. According to the surgical protocol for the Intralift, the new TKW1 to TKW4 diamond instruments are to be implemented for a stepwise bone preparation, taking into account bone density and thickness. With a maximum diameter of 2.8 millimeters, these tips make an exceptionally gentle cut into the hard tissue only (selective incision), precisely and free from bleeding. In this way they will create a micro-surgical access as in the keyhole technique, contrary to an invasive, external sinus lift.


**Hydrodynamic sinus lift through water activation**

After the stepwise pilot drilling, the smooth TKW5 tip, with internal irrigation to the extremity of the tip, is first inserted in the cavity to lift the Schneider membrane by hydrodynamic effect. After the elevation, the TKW5 can be used to insert a collagen fleece, as a protection against possible rupture of the sinus membrane, the augmentation material is then carefully moved cranially with the tip. If the material is compacted strongly, the activation of this novel plugging and trumpet instrument, with a low water flow rate, will cause an automatic dispersion of the augmentation material in the newly formed sinus cavity. According to the "Plug and Spray" principle, new material is now alternately inserted, compacted and then spread using water pressure from the piezo-electrically-activated TKW5 tip—until a safe primary stability is achieved for the implant.

**Reduced operational trauma—high acceptance by patients**

Next to the simple handling for the operator (whether a specialist or surgical newcomer), the new Intralift is also characterized by a comfortable and stressless procedure for the patient. Thus the new minimally-invasive sinus lift procedure causes hardly any post-operative swelling, pain or bleeding. The shortened and improved bone regeneration through piezo surgery is also certain to convince both parties!

The new Intralift TKW1 to TKW5 tips are now available in a special Intralift Kit (ref. F87336). They can be used with both the high-performance ultrasonic generator Piezotome as well as the ImplantCenter which was first introduced at the IDS 2007 trade fair.

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Nobel Biocare

## Procera® Crown Zirconia—research-proven, strong, and profitable

Procera® Crown Zirconia: available in four different shades.

Nobel Biocare, the originator of CAD/CAM dentistry, expands its offering of Procera® Crown Zirconia with three new shades. With Procera® Crown Zirconia in four colors, dental laboratories stand to increase their profitability by focusing on creating superior esthetics, instead of dyeing in-house or managing a shaded blank inventory. Furthermore, experienced ceramists can often achieve the desired final color in fewer veneering steps by starting with shaded bases, thus increasing their efficiency. Dental laboratories can order all shades of Procera® Crown Zirconia directly from within the newly released Procera® Software 2.0. For more information, visit: www.nobelbiocare.com

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