

50 plus one years into the future

An anniversary congress for German implantology

Dr Georg Bach, Germany

“Everything had been perfectly prepared, but the little matter of a virus got in the way”—with this opening statement, the congress president of the German Association of Dental Implantology (DGZI) opened the third Future Congress for Dental Implantology, which took place on 1 and 2 October in Cologne in Germany. Indeed, last year’s 50th anniversary congress, which was planned to be held in the founding German city of Bremen, fell victim to the coronavirus. However, DGZI made a virtue of necessity and celebrated its 50th birthday in the 51st year of its existence—with 50 speakers and about 250 participants (the coronavirus-related regulations did not allow for more). The focus on the first congress day on the Friday was on 75 table clinics, the livestreaming of two surgeries into the conference hall and a highly regarded digital poster presentation. The Saturday was all about science: renowned speakers—the who’s who in German implantology—presented outstanding scientific lectures, rounded off with courses for practice staff and a huge dental exhibition with 25 hand-picked industry partners.

Future-oriented congress structure

In terms of content, the course of events and the structure of the congress, Europe’s oldest professional society deliberately and unquestionably succeeded in breaking new ground, even in its 51st year of existence. The organisers aimed at realising a congress that was future-oriented, even in its organisation, featured attractive content and allowed the presentation of new points of view. Undoubtedly as a consequence of the coronavirus-related restrictions, the congress was somewhat smaller than in previous years. “We are pleased that so many participants came despite the pandemic, but we naturally would have appreciated even greater participation numbers,” said DGZI vice president Dr Rolf Vollmer. “Our overriding focus is on a structural reorientation and, above all, quality.” Dr Arzu Tuna, the DGZI vice president who represents the younger generation of implantologists, added: “The reactions of our colleagues and their feedback show that we have taken the right path!”



Fig. 1: The DGZI board members: Dr Rainer Valentin, Prof. Gyula Takacs, Oliver Beckmann, Dr Navid Salehi, Dr Rolf Vollmer, Dr Elisabeth Jacobi-Gresser, Dr Georg Bach and Dr Arzu Tuna (from left).



Fig. 2: Dr Georg Bach leads the participants in his opening lecture through half a century of dental implantology. **Fig. 3:** Prof. Ralf Smeets, Prof. Knut A. Grötz, Dr Georg Bach, Prof. Daniel Grubeanu and Prof. Bilal Al-Nawas (from left). **Fig. 4:** Dr Armin Nedjat (right) receives from Dr Georg Bach the honour for his father Dr Manutschehr Nedjat as a long-standing member of the DGZI. **Fig. 5:** Dr Georg Bach in conversation with Prof. Knut A. Grötz (left) and Prof. Bilal Al-Nawas (right).

Future Podium

The congress set off with a bang: three lectures with (at least on paper) completely different orientations painted a clear picture of the future options for our special field as well as for dentistry as a whole. The DGZI president, Dr Georg Bach, spoke about triumphs and tragedies in implantology, reflecting first on the founding of DGZI 51 years ago in Bremen. At that time, the new professional association collectively identified providing knowledge transfer in the field of implantology and promoting this then still young discipline as its core mission, and it focused on cooperation with other professional societies and collaboration with dental laboratories. By means of two patient cases, Dr Bach, who is an oral surgeon from Freiburg in Germany, demonstrated that it is undoubtedly possible to achieve successful results with implants that last for decades, based on the incredible progress that has been made over the past five decades.

The ideals and goals of DGZI today are still the same as in 1970. In order to be prepared for the next years of DGZI, the society is consistently focusing on continuing education and knowledge transfer, specifically aimed at the younger generation of dentists and dental technicians. Collegial and constructive cooperation with other implantological societies is another goal of DGZI for the coming years.

Prof. Shahram Ghanaati, a true expert in the field of biological dentistry, spoke next. His lecture on the use of autologous blood concentrates kicked off with a surprising statement: "Forget all classifications of biological materials in terms of their origin etc. What matters is the individual immune response." Prof. Ghanaati presented six studies and evaluated them with regard to their relevance to daily implantology practice. By means of excellently documented case studies, the Frankfurt-based oral surgeon, who leads a surgical oncology department at Goethe University, demonstrated how valuable the use of platelet-rich fibrin (PRF) membranes can be, particularly in socket preservation, and how this can achieve faster and more biological wound closure and, consequently, significantly improved healing. Prof. Ghanaati recommends thorough filling of the socket with PRF. Moreover, he sees hybrid materials as a promising future treatment option. He concluded by giving dental professionals one task: "You need to learn how to draw blood quickly and gently!"

At the Center for Dental Medicine of the University Hospital Freiburg, Prof. Katja Nelson has been working in translational implantology for quite some time and has acquired in-depth knowledge in this field over the past two decades, particularly in terms of digital approaches. Against this background, the first take-home message of her lecture surprised some participants: "When patients demand implant treatment, it's not enough to send them



Fig. 6: The winners of the Implant Dentistry Award 2021 around Dr Arzu Tuna. **Fig. 7:** The speakers at the MUNDHYGIENETAG 2021: Prof. Thorsten M. Auschill, Prof. Nicole B. Arweiler, Prof. Mozhgan Bizhang and Prof. Stefan Zimmer (from left). **Fig. 8:** Prof. Daniel Grubeanu (left) and Dr Wolfgang Jakobs. **Fig. 9:** The table clinics on Friday afternoon: a wide variety of implantology topics were discussed at 25 tables. **Fig. 10:** Impression of the well-attended table clinics on Friday afternoon. **Fig. 11:** From left: Katrin Wolters (DGZI secretariat), Dr Torsten Hartmann (DGZI managing director and member of the company management of OEMUS MEDIA AG) and Katrin Mielke (DGZI secretariat).

directly for a CBCT scan. A thorough clinical examination remains irreplaceable.” For Prof. Nelson, defining clear rules and adhering to them is a basic prerequisite for successful implant surgery. She then moved on to digital dentistry, paying special attention to data collection as the basis for creating dental restorations with the highest accuracy of fit. “You can do a lot with a CBCT scan and a digital scan,” she said. According to Prof. Nelson, segmentation is followed by manipulation of the data set. Thereafter, Dr Bach summarised one of the central messages of the three introductory lectures as follows: “Today, we are able to do a lot, but frankly, we have to be able to do a lot.” As part of the first round of the panel discussion, both Prof. Nelson and Prof. Ghanaati emphasised that the safe application of their preferred procedures requires an intensive and time-consuming training phase.

Live surgeries

Now it was time to put what had been learned into practice or, rather, to see it put into practice: multi-channel livestreaming of surgical operations into the conference hall enabled the participants to gain a unique and fascinating insight into the work of renowned practitioners—in high definition. Live surgeries are a tradition at DGZI congresses. In introducing this novel format, DGZI broke new ground in continuing education at the time. Hamburg-based specialist Dr Jan Klenke carried out the first surgery, which involved an elaborate recession coverage with an acellular dermal matrix using the tunnel technique. Owing to the dual site (donor and recipient) morbidity, periodontal recession coverage employing autologous graft harvesting is not that frequently used these days. However, Dr Klenke proposed a novel therapeutic approach: with the insertion of an acellular dermal matrix, postoperative morbidity is significantly minimised, since there is no need to harvest an autologous connective tissue graft.

In the second livestreamed surgery, German Society of Oral Implantology President Prof. Daniel Grubeanu from Trier in Germany presented his ideas, approach and experiences in relation to immediate restoration concepts by means of a quite challenging patient case in which an unsalvageable tooth #23 had to be extracted. Immediate implant placement with immediate loading was planned, and he detailed this step-by-step, including planning, implant placement and placing the temporary prosthetic restoration. For this purpose, the extracted tooth was shortened and hollowed out and then converted into a soft-tissue stabilising crown. It was impressive to see that the soft tissue was supported in such a way (also using a PRF membrane) that there was no post-traumatic loss whatsoever. His approach was unquestionably technique-sensitive and complex, but the treatment result proved the appropriateness of his procedure.

Table clinics and the digital poster presentation

For some, it was an unfamiliar sight: instead of the usual rows of seats facing towards the podium, round tables





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were set out as one would expect for a banquet. Each exhibiting manufacturing company had been provided with a table, at which demonstrations on a wide variety of implantological topics were given by invited experts in three sessions and the arising discussions proved to be very insightful. This new format was met with high acceptance on the part of the congress participants and the industry exhibitors. Another highlight was the online and interactive digital poster presentation, which took place on both congress days, the poster presenters being available in a lounge in the exhibition area directly in front of the conference hall. All posters could also be accessed online via mobile devices. Three prize winners were selected among the submissions on Saturday morning by Dr Tuna. The first prize went to Dr Tim Hilgenfeld, a private lecturer from Heidelberg in Germany, the second prize to the working group of Prof. Christoph Bourauel, Dr Istabak Dörsam and Dr Ludger Keilig, and the third prize to Prof. Ralf Smeets and Dr Sogand Schäfer's Hamburg research group. On the podium, every winner was given the opportunity to briefly present their awarded work to the audience.

Saturday—the day of science

After the first, quite practice-oriented congress day, the second day focused on the science of implant dentistry. Current trends were outlined, but the question "What will implantology look like in the future?" was given much

attention. Presidents and board members of implantological and other professional societies were invited to give lectures and present the latest trends and visions and their relevance to clinical practice. The Saturday programme of DGZI's annual congress offered scientific overview lectures on all relevant areas of oral implantology, including digital implantology and prosthetics, bone and soft tissue, materials and design. The participants were captivated with presentations on three themes: hard tissue, novel concepts, and soft tissue and its management.

Session 1: Hard tissue

The scientific programme of the second congress day was kicked off by Prof. Knut A. Grötz, president of the Deutsche Gesellschaft für Implantologie (German society for implantology), who spoke about bone augmentation in locally and systemically compromised cases. In an exciting overview of the history of augmentative surgery, Prof. Grötz outlined how "all past paradigms have been surpassed". While there is still an isolated need for iliac crest grafts, their number continues to decrease in favour of local and regional augmentation. This is made possible primarily by osteosynthetic procedures and devices. Ultimately, the decisive factor is a systematic classification of patients who are systemically compromised, which, according to Prof. Grötz, is true of 95–97% of all patients with compromised bone. Such a classification would enable the choice to be made against augmentation and in favour of reduced-diameter and short implants. The credo of Prof. Grötz, who is an oral surgeon from Wiesbaden in Germany, is that the goal and key should be personalised implant dentistry.

Prof. Bilal Al-Nawas, director of maxillofacial surgery at the University Medical Center of Johannes Gutenberg University Mainz in Germany, demonstrated what has been made possible over the past 50 years with a view to implants, bone and soft tissue. In eloquent fashion, he stated, "with implantology, it's like with the miniskirt: it all returns eventually". Indeed, his literature review of publications from the 1970s proved that at the time there were already techniques available that worked and that satisfied patients. These were



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Fig. 12: CAMLOG dual leadership: Martin Lugert (left) and Markus Stammen.



Fig. 13: A highlight was the digital poster presentation, the winners of which were awarded prizes on Saturday afternoon.

refined, however, and new options were added. In this context, the focus on titanium as the implant material represented an important step, according to Prof. Al-Nawas. The 1990s were distinguished by the development of new implant systems, some of which are still on the market today. In the same period, new procedures with predictable results were established, such as the sinus lift. The years after the turn of the millennium were characterised by observations on late complications of implant treatment that are of a biological and technical nature. The speed of osseointegration was significantly increased by the development of new implant surfaces, and handling of the gingival cuff was significantly improved in implants with platform switching, which is vital when it comes to the interaction between gingiva and bone. Prof. Al-Nawas noted that the most recent achievements have included reduced-diameter and extremely short implants, as well as implants made from zirconia.

Prof. Christian Gernhardt, a university lecturer from Halle in Germany, continued to push boundaries, introducing himself as “the preserver of teeth who stands in the way of implant dentists”. In his lecture, he outlined when tooth preservation and when implant treatment is the better choice. Decision-making today is increasingly moving in the direction of tooth preservation and root canal therapy mainly owing to new techniques and procedures and industrial developments in the field of endodontics, he explained, and the debate around peri-implantitis has only spurred this on. According to Prof. Gernhardt, root canal therapy is the treatment of an infectious disease and the interface between endodontics and medicine plays a major role in this regard in the sense of individualised medicine. Prof. Gernhardt concluded his lecture by arguing that “tooth preservation always comes first”.

Session 2: Novel concepts

Following on from his impressive live surgery on the previous day, Prof. Grubeanu once again emphasised the importance of immediate implant placement in daily practice as part of his lecture. He stressed that resorptive

processes always occur—regardless of way the socket is filled up. Placement of the implant 1 mm sub-crestally and in an optimal 3D position is a key prerequisite for this implantation protocol. Based on Wolff’s postulates from 1892, Prof. Grubeanu asserted that bone must be loaded in order for it to be preserved, substantiating his argument for immediate implant placement and immediate loading. Excellently documented case studies supported Prof. Grubeanu’s conclusion: “Immediate loading and immediate implant placement brings joy for both patient and dentist.” Prof. Smeets then defined risk factors in implant dentistry and pointed to the need to consider patients’ vitamin deficiencies, metabolic diseases and medications. He reported that 30% of patients have inadequate vitamin D levels, and he recommends supplementation ahead of major implant procedures, such as sinus lift. He also discussed the consequences of taking proton pump inhibitors—information that was met with great interest on the part of the attendees. Dr Wolfgang Jakobs, chairman of the Berufsverband Deutscher Oralchirurgen (professional association of German oral surgeons), subsequently elaborated on his main discipline: anaesthetic procedures in implantology. Dr Jakobs noted that psychosomatic disorders have increased by over 30% in recent years, and he provided practical tips on local anaesthesia in dentistry, current sedation procedures and general anaesthesia. According to Dr Jakobs, the titrated administration of midazolam has established itself as the gold standard for sedation owing to its high level of safety.

Session 3: Soft tissue and its management

The question of material was posed by Prof. Florian Beuer, who discussed different materials for implant prostheses. “Very often I see implant-supported restorations with excellent implant placement but only average prostheses,” said Prof. Beuer, chairman of the Department of Prosthodontics, Geriatric Dentistry and Craniomandibular Disorders at Charité—Universitätsmedizin Berlin. “That’s really a shame!” He believes that a remedy can be found in the continued exploration of material-specific potential, such

an example being tooth-coloured materials such as zirconium dioxide, which has proved to be advantageous in terms of aesthetics and biocompatibility. However, the pursuit of developing ever more translucent materials from zirconium dioxide has meant that losses in material strength have had to be accepted and so only first- and second-generation zirconium dioxide materials should be used in the posterior region. According to Prof. Beuer, it is furthermore impossible to imagine implant prostheses today without the modern generation of acrylics—especially since they can be processed in CAD/CAM procedures. For complex restorations, these new high-performance acrylics can be put to use successfully.

Subsequently, Prof. Thorsten M. Auschill, a lecturer at the department of periodontics of the University of Marburg, posed the question “How do I create optimal tissue conditions?” and in his lecture addressed the topic of soft-tissue defects in answering this. Right at the beginning of his presentation, Prof. Auschill clarified that untreated periodontitis and peri-implantitis lead to soft-tissue loss. His lecture put great focus on recessions and the treatment options for covering them. DGZI past president Prof. Friedhelm Heinemann, from the University of Greifswald in Germany, spoke about implant and prosthetic restorations and their potential. He began by revisiting an old topic, as he described it in his introductory remarks: bone stability around the implant. In this context, platform switching plays a central role, according to Prof. Heinemann, and stability is enhanced by a taper, because “we have to get away from the bone!” he explained. However, since the taper carries a rather high fracture risk and may have aesthetic disadvantages in the maxillary anterior region, Prof. Heinemann sought to incorporate both taper and platform switching in one implant system. He received support for this project from the working group headed by Prof. Bourauel, the results of which led to the development of a product line. Prof. Heinemann’s presentation was rounded off by the results of his own randomised controlled trial.

The closing lecture of the 50th DGZI annual congress was delivered by yet another DGZI past president: Prof. Frank Palm, who answered the question of how to preserve alveolar bone after tooth extraction. Prof. Palm heads the clinic for oral and maxillofacial surgery at Klinikum Konstanz hospital in the city of Constance in Germany and also a large outpatient clinic. He has been known for years as an eloquent and committed advocate of bone substitutes. His remarks at the congress were also dedicated to this topic. Prof. Palm presented a product he co-developed, CERASORB Foam, which is a beta-tricalcium phosphate foam designed to lead to the preservation of lamellar bone. In addition, this new material is particularly beneficial in terms of volume preservation, according to Prof. Palm. Should implant surgery be performed in such a pretreated bone area, a drilling protocol for soft bone is required. Small, not yet organised beta-tricalcium phosphate remnants can be left in a site like this.



Fig. 14: Transmission of the live operation into the conference hall of the Future Congress.

A brief summary

At the 50 plus one congress in Cologne, participants experienced an outstanding and innovative continuing education event and a worthy anniversary celebration of the oldest European implantological expert society. But not only that: by looking at implantology from different angles—science, practice, politics and industry—a new level of interaction was achieved. By attempting to address the urgent question of what implantology will look like in five or perhaps ten years from now and what the political and economic framework conditions will be then, new ground was broken on the part of DGZI, whose members shared the stage with the who’s who in German-speaking dental implantology. “We are pleased, grateful and happy about this beautiful anniversary congress and we are glad that we have taken new paths with our Future Congress!” said Dr Bach. As a conclusion of the third Future Congress, it can be stated that, with regard to the implantological practice of the future, in addition to scientific and technological aspects, it is primarily a matter of answering strategic questions. DGZI will continue to work actively on this topic with the aim of demonstrating the importance and appeal of its professional society in the 50 (plus one) years to come.



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