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## DIGITAL DENTISTRY SOCIETY (DDS) AND INTERNATIONAL ACADEMY OF CERAMIC IMPLANTS (IAOCI):

### A Symbiosis of 2 Advantgardist Trends In Dentistry

#### > Digitalization opens the doors to a new chapter in dentistry...

The Digital Dentistry Society International is an international society spread in 60 countries with the mission to be the reference, validation and educational platform in digital dentistry.

Biological treatment and digital workflows are 2 parallel trends in implant dentistry.

In the USA, DDS (<https://digital-dentistry.org>) is partnering with the IAOCI (<https://iaoci.com/>), spreading the digital technologies, science and education in connection with ceramic implants and restorations.

The "metal-free" trend has long been apparent starting with crowns and bridge prosthesis and by extension is also now evident in implantology. Titanium implants are subject bio-corrosion, especially in the presence of lipopolysaccharides from bacterial walls and that titanium particles have been

found in the peri-implantary hard and soft tissues.

53% of patients who were questioned would correctly leave the choice of implant material to the treating dentist, but a significant 35% of patients would opt for a ceramic implant and only 10% for a titanium implant (Tartsch et.al).

With materials such as Y-TZP-A with a flexural strength of up to 1,200 MPa or ATZ with a flexural strength of up to 2,000 MPa, the risk of fracture is reduced to a minimum. Aging processes due to hydrothermal degradation have hardly any clinical relevance. Aluminum oxide blasting (macro-structuring) and acid etching of the implant surface (micro-structuring) create an enhanced bone-implant contact (BIC) comparable with that which is achieved with titanium, conditions for an optimum Osseointegration.

Two piece Ceramic Implants offer an option along with biologic features, the flexibility of restorations as well as a CAD/CAM approach. (Fig. 1 and 2)

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> Figure 1. Straumann - PURE and SNOW

> Figure 2. Zeramex P6 and Zeramex XT

Procedures consists in the addition of growth factors to collagen membranes and matrixes, in order to enhance the quality of periimplantary soft tissues (Ghanaati et al.).

The main approach in Implant dentistry was started many years as "free hand" implant placement, a "mental" navigation. (Fig.1)

**Today static and dynamic navigation are state-of-the-art**

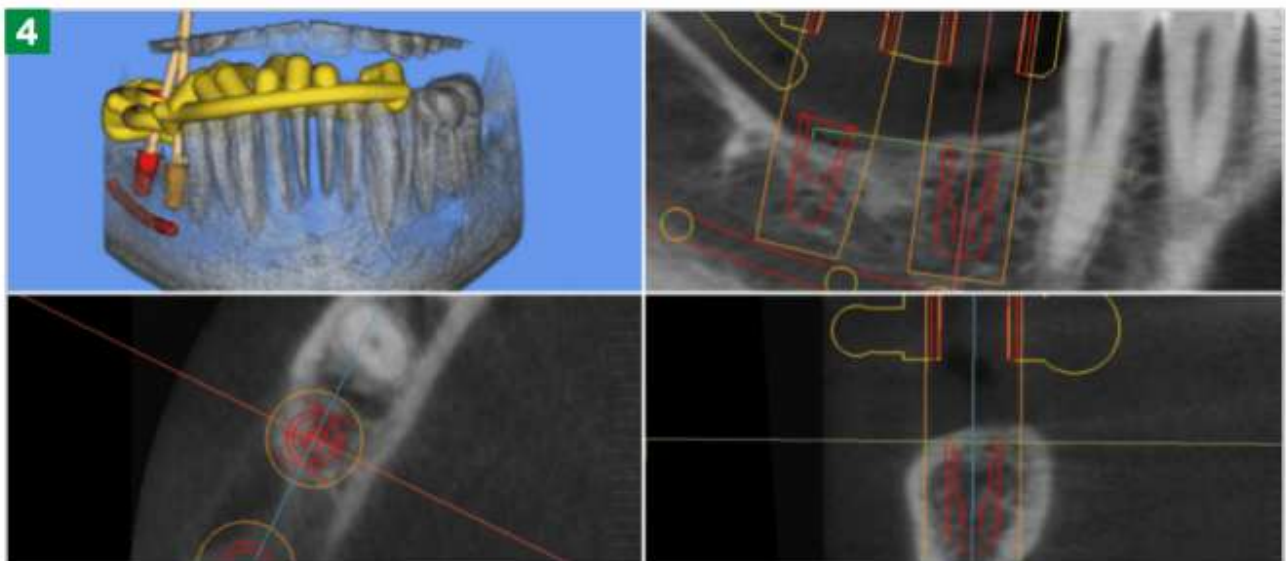
Digital planning and implant navigation assures additional benefits to the implant procedure: higher precision, accuracy, predictability in the protection of the anatomical structures, minimally invasive procedures, faster result, and the possibility of immediate predictable restorations.

Navigation requires a different approach and workflow than free hand surgery, by following the sequence: SCAN, PLAN, MAKE, DONE. (Fig. 3)

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In the following phases, matching and planning of implants and reconstructions are parts of the workflow where esthetic parameters and experience play a primary role. (Fig.4)

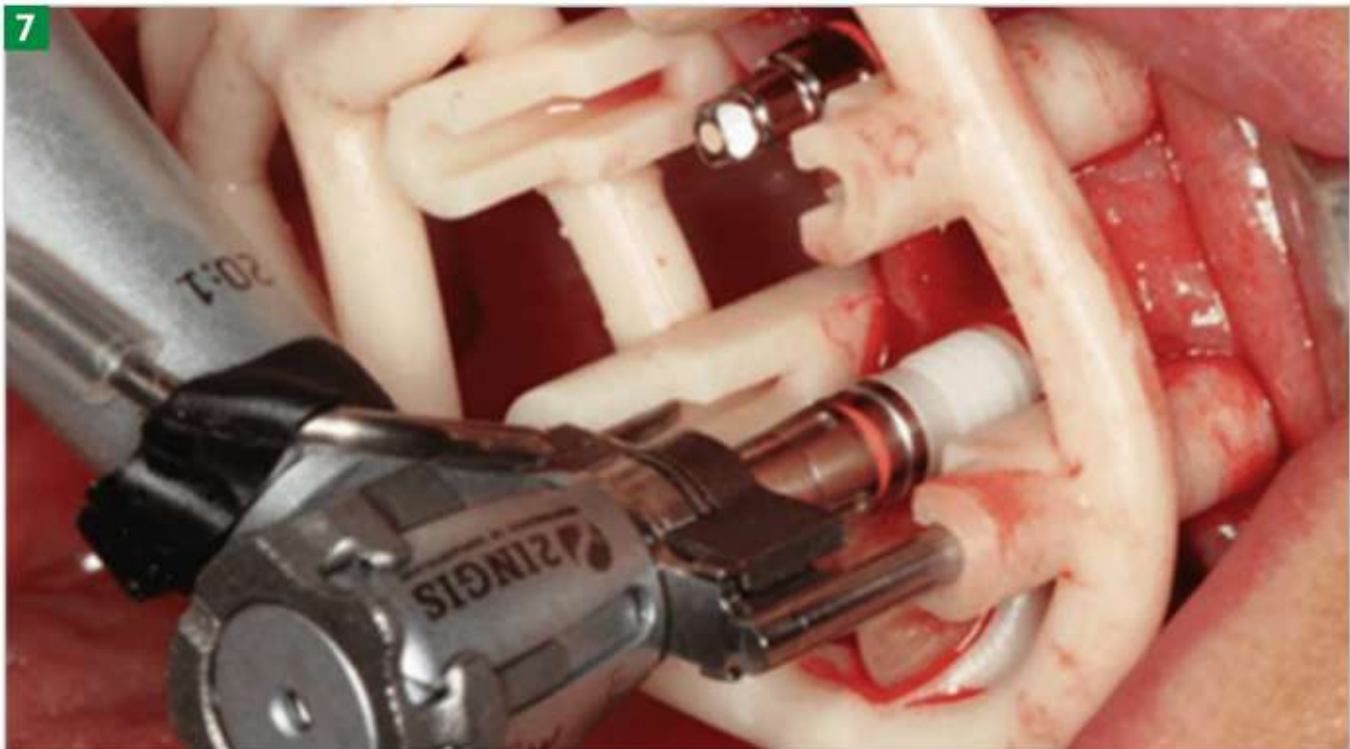


Teamwork, common "language" and education in this new discipline are conditions "sine qua non" for good results. More studies concerning trueness and precision of the technologies are necessary as well as a consequent and controlled implementation in a cohesive workflow.

The surgical guide with sleeves is one of the methods of guided surgeries with the widest usage. (Fig. 5)



In comparison, 2INGIS (Belgium), is an innovative sleeveless guided approach, compatible with all implant systems.



### The advantages of the "2INGIS" guided system:

Sterilizable at 135 degrees, open structure, good visibility, great irrigation, surgical approach without guide contact contamination and compatibility with any surgical system. There is no need for a system specific guide and it allows for implant placement in cases of limited space of mouth opening. They seem to have a higher accuracy compared to all systems.

Dynamic Navigation (Navident, Claronav, Canada) is a free hand surgery by 3-dimensional navigation that has proven to be more accurate than free hand implant placement (Block et al.). Fig. 7.



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### Common targets of the DDS / IAOCI cooperation:

- To validate all new digital technologies and their applications to ceramic implants.
- Set up esthetic parameters of planning, esthetic success.
- Build up a coherent, systematic approach, and workflow, for a predictable treatment.
- Common education in the symbiosis of digitalization, esthetics and biological driven implant dentistry.

Be present at  
The Third Digital Dentistry  
Society Consensus Conference  
2-3 October 2020  
Serralunga d'Alba, Italy

#### References:

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2. Block, M. S., Emery, R. W., Cullum, D. R., & Sheikh, A. (2017). Implant Placement Is More Accurate Using Dynamic Navigation. *Journal of Oral and Maxillofacial Surgery*, 75(7), 1377-1386. doi: 10.1016/j.joms.2017.02.026.



Meet the  
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Dr. Henriette Lerner is the founder and Director of HL Dentclinic and Academy in Baden-Baden, Germany, which is an academic clinical, teaching and research facility of the Johann Wolfgang Goethe University, in Frankfurt on Main, Germany.

Dr. Lerner is the Past President of the Digital Dentistry Society International (DDS).

In 1990, Dr. Lerner was granted the degree of Doctor Medic. (DMD degree) from the Faculty of Dental Medicine, in Temeschburg, Romania, and then completed her post-graduate education in Oral Surgery, in Bucharest Romania. Later, Dr. Lerner's education in Implant Dentistry was completed in Germany and at Boston University.

Among her other certifications, she is a Board Member & AMP; Expert for the DGOI (The German Society of Oral Implantology,) and is an ICOI Diplomate. Dr. Lerner is also an Editorial Advisor for two scientific journals (Practical Implantology and DGOI Oral Implantology). She is the author of a number of scientific papers and book chapters (Esthetics in Dentistry; Implant Esthetics), which detail esthetics in Implantology, grafting procedures, biomaterials science and digital technologies. Dr. Lerner's expertise spans the fields of clinical research, advanced techniques in the Digital Workflow of complex implant cases, soft and hard tissue augmentation techniques, biomaterials research, dental aesthetics, and designing functional occlusion in complete oral rehabilitation.