

## New trends in oral implantology

# Whither ceramic implantology?

Over the past few decades, oral implantology has made more progress than almost any other dental discipline. Most questions regarding biological principles, treatment protocols, bone augmentation or implant materials and geometries have been scientifically investigated—and answered. The available systems have largely converged in terms of design and protocols, as Dr Jens Tartsch, President of the European Society for Ceramic Implantology (ESCI), confirms in this interview.

***Dr Tartsch, what are the current trends in oral implantology?***

It comes as no surprise that current trends tend to focus on specialisation, such as the digitalisation of workflows or the development of special implant geometries. These include innovations such as extensive screw threads for greater primary stability of immediately placed implants or trioval implant bodies, which are expected to provide additional benefits.

However, implantology congresses and specialist journals have focused much of their attention on another topic: ceramic implantology. Ceramic implants are currently the most important innovation in oral implantology, but unfortunately also still the most controversial one.

***How do you think ceramic implants and their success rates are currently viewed in the scientific and clinical community?***

In the past, ceramic implants were the domain of “holistic dentistry” and tended to be regarded as niche products. But this may no longer be the case today.

The survival rates of most modern zirconia implant systems are already on a par with those of titanium implants for the evidence-based indications of single-tooth restorations and three-unit bridges. Ceramic implants have thus become a serious factor in oral implantology. For one-piece ceramic implants, this has been confirmed by the S3 Guideline Conference of the DGI (2022): “[...] are valid and ready-to-use therapeutic procedures and can be used as an alternative treatment option.”



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For two-piece ceramic implants, the Scientific Advisory Board of the ESCI confirmed in its official statement (2021) that “the two-piece zirconia implant concept is appropriate for clinical application.” It also pointed out that “for clinical successes, each manufacturer’s guidelines regarding the strict application for the specified clinical indications should be followed for the respective two-piece zirconia implant.”

Ceramic implants are attracting growing interest and are increasingly finding their way into general implantological practice. Technological innovations and developments in materials, surface designs and treatment protocols now make it possible to successfully exploit the clinical advantages (such as improved aesthetics or reduced tendency to inflammation) in daily practice on a long-term basis.

***What are the current developments in ceramic implantology, and how do you assess its potential? And what challenges do you see for its successful application in the future?***

Unlike titanium-based implantology, the field of ceramic implantology still leaves much room for research, new innovations and trends. New materials, new computer-aided design and manufacturing (CAD/CAM) techniques, and special 3D printing processes are currently being developed to enable new implant geometries and implant-abutment connections. In addition, the use of new surgical instruments and guides as well as the use of advanced imaging techniques are targets of current research. The much-vaunted evidence base is also being strengthened, with early studies showing good ten-year results.

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**Building on experience sound evidence, a lot is happening in ceramic implantology!**

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A scientifically sound and evidence-based approach, together with in-depth knowledge of materials and procedures, is particularly important for successful application—and thus for the validation of this trend towards ceramic implants.

It should be noted that part of the available product range is still very heterogeneous and that the treatment protocols sometimes diverge from those for titanium implants.

To evaluate such background information, to generate and verify scientific facts, and to provide the appropriate training is the task of a scientific professional society, as represented by the ESCI as a Europe-wide network.



For the ESCI, the trend in implantology is absolutely clear: Modern ceramic implants, used correctly and for the proper indications, represent a highly innovative addition to the treatment armamentarium in oral implantology. Their importance will continue to grow in the future.

***Thank you very much, Dr Tartsch.***



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