Shaping the future of dentistry through technology

An interview with Dr Maria Grazia Di Gregorio-Schininà

High-resolution intra-oral scans, CAD/CAM-guided milling, and additive manufacturing are transforming modern dentistry, enabling workflows that are faster, more precise, and increasingly patient-centered.

At the same time, the digital transition presents significant questions: How reliable are digital impressions in routine clinical practice? Which materials can withstand the demands of everyday use? And how can dental practices effectively integrate these new workflows?

In conversation with Dr Maria Grazia Di Gregorio-Schininà, Senior Consultant in the Department of Prosthodontics at University Hospital Cologne, Germany we examine the latest advances in digital dentistry—from virtual treatment planning and computer-aided fabrication to the clinical and patient acceptance of contemporary restorative methods.



Dr Di Gregorio-Schininà, as Senior Consultant in the Department of Prosthodontics at University Hospital Cologne, you have a comprehensive perspective on current developments. How has digital dentistry evolved in recent years?

In recent years, digital dentistry has advanced at a remarkable pace. The use of intra-oral scanners, facial scanners, and CBCT imaging for clinical diagnostics, alongside CAD/CAM technologies and 3D printing in the dental laboratory, has become firmly established and is increasingly regarded as standard practice. The integration of AI-assisted planning and diagnostic tools now enables clinicians and technicians to achieve significantly more precise and efficient treatment planning. This also supports improved patient communication, allowing for a clearer discussion of anticipated outcomes, compromises, and limitations of proposed treatments.

What concrete advantages do digital workflows offer for the planning and fabrication of dental restorations? Are there measurable improvements in precision or patient satisfaction?
Digital workflows facilitate accurate impressions and faster production of restorations, while also significantly increasing the predictability of treatment outcomes. The fit of crowns, bridges, and implant superstructures is often markedly improved through digital fabrication and achieved more quickly. Studies indicate that patient satisfaction has risen, particularly due to shorter treatment times and less invasive impression techniques.

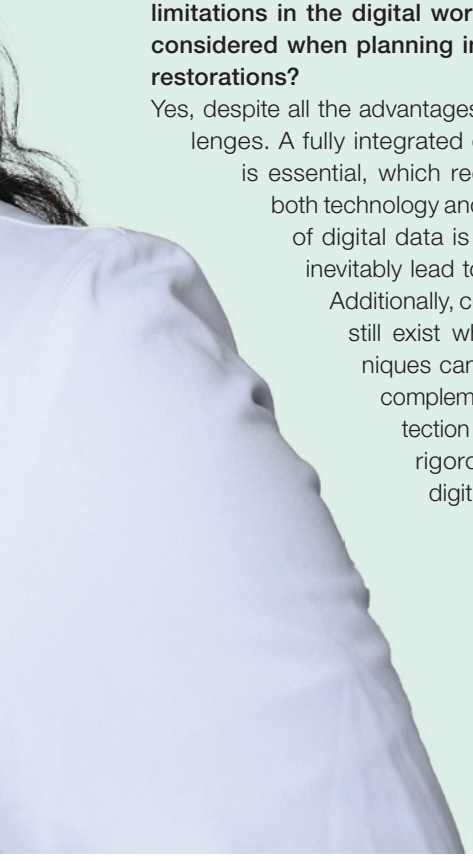
How has communication between dental technicians and surgeons evolved with digital workflows? Are there new opportunities for interdisciplinary collaboration?
Absolutely. Digital treatment strategies enable closer collaboration and more precise coordination in treatment planning. The use of digital planning software allows prosthodontists, surgeons, and dental technicians to work together efficiently. Virtual wax-ups, digital treatment plans, and real-time approvals reduce misunderstandings and streamline the workflow. As a result, interdisciplinary collaboration is not only facilitated but also significantly enhanced in terms of quality.

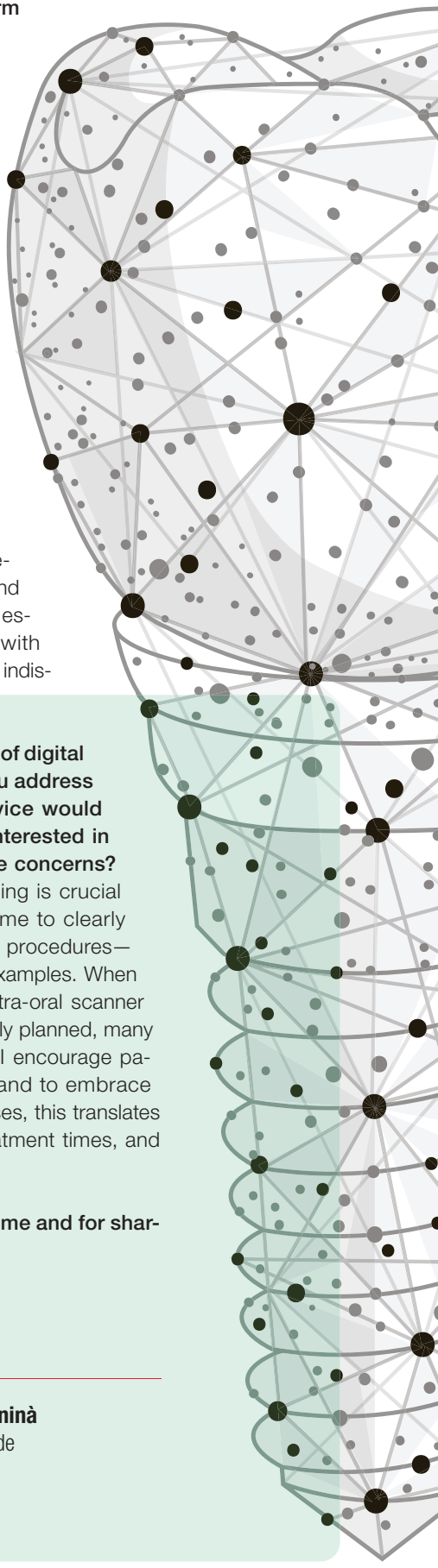
From your perspective, are there challenges or limitations in the digital workflow that must be considered when planning implants and dental restorations?
Yes, despite all the advantages, there are still challenges. A fully integrated digital infrastructure is essential, which requires investment in both technology and training. The quality of digital data is critical. Poor scans inevitably lead to suboptimal results. Additionally, complex clinical cases still exist where analogue techniques can serve as a valuable complement. Finally, data protection and security must be rigorously observed in all digital communications.

How do you assess the long-term development of digital dentistry? Will digital methods eventually replace nearly all traditional techniques, or will a hybrid approach remain necessary?
In the long term, digital workflows will certainly take over the majority of traditional processes. The trend is clearly moving toward fully digital treatment pathways. Nevertheless, there will always be cases where a hybrid approach is advantageous, for example, in highly individualised aesthetic restorations or with patients who present challenging anatomical conditions. Consequently, comprehensive training in both digital and conventional techniques remains essential, and close collaboration with dental technicians continues to be indispensable.

Many patients remain sceptical of digital treatment methods. How do you address this scepticism, and what advice would you give to patients who are interested in digital procedures but still have concerns?
Comprehensive patient counselling is crucial and indispensable. I take the time to clearly explain the advantages of digital procedures—often using images or practical examples. When patients see how precisely an intra-oral scanner works or how an implant is digitally planned, many of their concerns are alleviated. I encourage patients to ask questions openly and to embrace modern technology—in many cases, this translates into greater comfort, shorter treatment times, and improved outcomes.

Thank you very much for your time and for sharing these valuable insights.





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