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Preface

26th / 20th Anniversary of CEREC

Art, Science, Education and Economy in Dental Practice and Laboratory

The idea for CEREC emerged early in 1980, 26 years ago, on the basis of in vitro and in vivo experiments on tooth-colored inlays as an alternative for direct composite restorations. The fathering of the clinical and technical concepts and the gestation of the CEREC 1 unit took until September 19, 1985, the birthday of the very first chairside CEREC inlay. Since that day, well 20 years ago, CEREC has been further developing as a clinical method.

The birthplace of CEREC is Zurich, Switzerland, where it emerged as a joint development of the University of Zurich Dental School on the clinical side and Brains Inc. (Brandestini Instruments) on the technical side. Cooperation in research and development started with Siemens in 1986 and continued with Sirona since 1997 up until now. While CEREC 1 was held under strict confidentiality until the day of its birth, it gradually became public afterwards.

In 1986 the introduction of CEREC in the dental world was received enthusiastically by a few freaks only. They loved the high-tech development specially designed for dentists. While I was soon using the system routinely, most colleagues still considered CEREC utterly futuristic or immature.

However, at the time of the first “International Symposium on Computer Restorations: State of the Art of the CEREC Method”, which I had organized to be held on May 3-4, 1991 in Zurich, close to 1000 dental practitioners world-wide were using CEREC. This first CEREC symposium marked a cornerstone for growing research on and acceptance of this method.

The CEREC 10 Year Anniversary Symposium “CAD/CIM in Aesthetic Dentistry” (CIM=Computer Integrated Manufacturing) was again celebrated in Zurich in March 1996.
CEREC 2 and the new potential of fabricating full crowns were the focus of discussions by then, CEREC had 3000 users worldwide. All users, participants and presenters at the symposium were dentists. Our one single presentation was “CEREC and the Dental Technician.”

Splitting the system into separate designing and machining units marked the advent of CEREC 3 in the year 2000, establishing the prerequisite for winning the dental laboratory world over to CEREC. Fitted with a laser scanner, CEREC Scan, later CEREC inLab, entered into the dental world. In-Ceram® Classic Alumina, Spinell and Zirconia (Vita) crown copings and 3-unit bridge frames could be designed and machined with CEREC technology. However, the big surge ahead in the acceptance of the system occurred with the introduction of 3D software in 2003, making operation so much easier than before.

Parallel to the 3D software, machinable blocks of YTZP-Zirconia high-strength ceramic “In-Ceram 2000 YZ (Vita) and, in 2005, IPS e.max CAD and ZirCAD (Ivoclar Vivadent) became available. The “inEOS” (Extra Oral Scanner) scanning device introduced in 2005 won many laboratory technicians over. The secret is that it contains the CEREC camera, allowing much quicker scanning than with the laser point scanner. Dental laboratory technicians, welcome to the world of CEREC technology!

The fact that roughly 17,000 dental practitioners, 100 university dental schools and more than 2000 dental laboratory technicians worldwide are now using CEREC convincingly demonstrates the strong acceptance of chairside and labside CEREC CAD/CAM fabrication of ceramic dental restorations. Several clinical long-term studies of bonded ceramic CEREC inlays, onlays, partial crowns and veneers have shown that these restorations perform well during 10 to 18 years of clinical service. Later studies of CEREC full crowns and 3 to 4-unit bridges show the same positive trend for the 3 to 7 years of clinical service available for analysis so far. I attribute the success of CEREC technology during the past 20 years to the incessant research and development efforts of numerous scientists at universities and in the industry as well as to important contributions from practitioners and dental laboratory technicians.

Critical aspects of the art, science, education and economy of CEREC in dental and laboratory practice were discussed during the 20YC Symposium in Berlin, March 17-18, 2006, and the contributions of researchers, practitioners and dental laboratory technicians are documented in the proceedings book. They represent the current state of this technology and should be highly interesting for everybody concerned with restorative dentistry.

I thank all authors, members of the scientific committee and the editorial team very much for their contributions and teamwork.

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