CEREC – CAD/CAM FOR DENTIST

From vision to reality.
Hello future. Welcome to the present.

There is a direct correlation between sophisticated technology and customer satisfaction. Just a few figures will prove this point. Over the past 20 years, more than 15 million CEREC restorations have been created and placed worldwide – to the complete satisfaction of patients and dentists. After five years, 95–97 percent of all CEREC crowns were still intact. The survival rate of inlays and onlays was 90–95 percent after ten years.

Today, a CEREC restoration is created and placed every few seconds somewhere in the world. Far from being an experimental technology, CEREC is a well-established and proven clinical procedure. Dentistry is in a state of continuous change. We at Sirona are responding to this with our knowledge and experience – with innovations and ideas that enable you to master the challenges of modern dentistry and boost your job satisfaction.
According to a motivation study carried out by the German Society for Computerized Dentistry (DGCZ), there are three key reasons why patients choose CEREC ceramic restorations: they are metal-free; they are tooth-coloured; and they can be placed during a single appointment. CEREC was specially developed in order to create all-ceramic restorations directly at the chairside and in just one treatment session. The indications spectrum encompasses inlays, onlays, partial crowns, veneers, as well as crowns and provisional bridges (posterior and anterior). CEREC
unites the benefits of all-ceramic materials and one-appointment dental treatment that dispenses with conventional impressions and temporaries. The CEREC procedure is fully accepted in scientific circles. The hardware and software have been continuously developed in the interests of user-friendliness and cost-effective practice integration. In short, high-quality aesthetic restorations are your passport to increased patient satisfaction and loyalty.
THE CEREC OPTICAL IMPRESSION – QUICK, SIMPLE, PRECISE

The basis that engenders trust.

The CEREC procedure is simple from the word go. You show the patient the defect, prepare the tooth and then create an optical impression in just a few seconds. The easy-to-use CEREC 3D camera always displays the tooth in constant magnification, regardless of the distance between the preparation site and the lens. The extensive depth of field goes hand in hand with razor-sharp image quality. It’s even possible to acquire difficult inlay preparations in three dimensions with just a single exposure. To acquire bridge preparations and/or the adjacent teeth, you can overlay and juxtapose several images with just one click of the mouse. Even virtually inaccessible areas can be precisely acquired. The three-dimensional optical impression of the preparation and the antagonists provides a dependable basis for designing the restoration.
The CEREC image acquisition unit – optical impression for optimum efficiency.

Ready for use anywhere in your dental practice:

The CEREC image acquisition unit consists of the CEREC 3D measuring camera and a PC that has been specially designed for the design of dental restorations. The camera has been optimized for taking optical impressions directly in the patient’s mouth. These intraoral images eliminate the need for conventional impressions and temporaries. This saves time and enhances the appeal of your dental practice to patients. Equipped with the optional SIROCAM intraoral camera and the SIDEXIS digital X-ray software, your CEREC image acquisition unit functions as a fully featured chairside communication system, ready for use anywhere in your dental practice. The image acquisition unit is connected to the CEREC 3 milling unit via a wireless link – and to the new CEREC MC XL milling unit via LAN/WLAN. You also have the option of presenting patient information videos from CDs or DVDs. This enables you to streamline your patient counselling tasks.

The CEREC image acquisition unit: mobile and versatile. It consists of a PC, a flat panel monitor and a precise 3D measuring camera.

CEREC Chairline – concentration on the essentials.

The measuring camera at your fingertips:

If you choose the CEREC Chairline module, you can integrate the CEREC 3D measuring camera directly into the M1+, C2+ and C4+ treatment centres. This maximizes efficiency and ergonomics. As the camera is located at your fingertips, you are free to concentrate on the essentials. Your patients will feel secure and well looked-after. Last but not least, this all-in-one configuration saves valuable space in your treatment room.

Thanks to its built-in measuring camera, CEREC Chairline is synonymous with perfect workflows, superior ergonomics, user-friendliness, attractive and space-saving design, plus effective patient counselling.
THE CEREC SOFTWARE – INTUITIVE AND BIOGENERIC

Software that is easy to use.

The CEREC 3D software displays the preparation model, the antagonists and the restoration proposals in three dimensions. The intuitive user interface has been optimized for the molar region. You do not require any special computer skills and are therefore free to concentrate entirely on medical aspects. The software guides you – step by step – to the finished restoration. The occlusal surfaces correspond exactly to the natural originals. CEREC 3D boasts additional design functions for complex anterior and posterior restorations. There are no limits to the creativity of experienced CEREC users.
The perfect restoration is a team effort – your skills together with our software.

You take the optical impression

With just a few exposures you acquire an optical impression of the preparation, the adjacent teeth as well as the antagonists (by means of a bite registration and/or an FGP). The camera crosshair and the immediate three-dimensional screen display are a big help in this respect.

The software does the design work

Simply mark the preparation margin with a few mouse clicks and let the software do the rest – automatically and with textbook precision. The system automatically detects whether you want to create an inlay or a crown and makes corresponding proposals.

You receive a “natural” design proposal

CEREC 3D proposes a finished restoration – with precisely adjusted occlusal and proximal contacts. This is possible thanks to various built-in databases containing the measurements of several thousand natural teeth. Practical experience has shown that the proposed occlusal surfaces are perfectly matched to the antagonists – especially in cases where the dentist has used a bite registration and CEREC has designed the occlusal surfaces automatically.
You have fascinating design options

If you wish, you can start the milling process straight away – or else modify the CEREC design proposal. With just a few clicks of the mouse, you can fine-tune the surface of the restoration and evaluate the outcome immediately. You can then initiate the milling process and move on to the next patient. After just a few minutes, the milled restoration is ready and waiting.

From inlays to crowns

Regardless of whether you want to create an inlay, an onlay, a partial crown or a full crown, the procedure is always the same for you and your assistant: select the tooth, take the optical impression, mark the preparation margin, evaluate the restoration proposal, start the milling process, and then place the restoration.

Master mode

The Master mode caters for complex posterior and anterior restorations. Experienced CEREC users swear by its sophisticated features.
THE CEREC MATERIALS – VERSATILE AND BIOCOMPATIBLE

The right material for every indication.

When creating CEREC restorations, you can choose from the very best materials. Feldspar ceramics, glass ceramics and high-performance polymers cater to the complete spectrum of chairside indications. They are biocompatible, clinically tested and durable – and help you to conserve more of the healthy tooth tissue. The materials are backed by the expertise of renowned manufacturers such as Vita Zahnfabrik, Ivoclar Vivadent, Merz Dental and Sirona. Around 20,000 dentists place their trust in CEREC. And over ten million patients are delighted with the results.
Perfect materials display genuine enamel-like properties.

The CEREC ceramics offer outstanding characteristics

They are biocompatible and metal-free and hence can be combined with existing metal-based restorations. Problems due to corrosion and incompatibility can be virtually ruled out. The aesthetic appearance of the restoration is not compromised by opaque metal structures. Gingival irritation and retraction do not occur. In addition, the ceramic materials fulfil stringent standards in terms of fracture toughness, abrasion, aesthetics and machinability. Last but not least, they are suitable for adhesive bonding. The tooth and the ceramic material are permanently joined.

Glass ceramics for crowns

In many cases it is possible to adopt a more conservative approach. Adhesively bonded ceramic onlays reinforce the residual tooth tissue: a perfect alternative to conventional PFM crowns. And if a crown is unavoidable, CEREC can fabricate high-strength restorations out of glass ceramic blocks quickly and reliably. These can be created and conventionally cemented during a single appointment.

Materials for provisional anterior crowns

Temporary restorations placed on high-quality implants? Often this is not the ideal solution. Dentists now have the option of using pre-shaped, aesthetically layered crowns made of a high-performance polymer material (IPN). With the help of the CEREC system, these restorations can be easily adapted to the abutment or the preparation – with convincing aesthetic outcomes.

Composite materials for temporary bridges

CEREC users are interested in creating temporary bridges that are not only durable but also look good and are easy to fabricate at the chairside. The available materials can be individually characterized and are approved for bridges with up to four units.
The fast track to aesthetic results

The CEREC ceramic materials are quick and easy to polish. Alternatively, they can be glazed or locally veneered (something you can delegate to your assistant or dental technician). However, the "chameleon effect" is so good that polishing is usually sufficient for inlays and (most) onlays.

Translucent and naturally layered

Thanks to their high translucency, CEREC restorations blend in perfectly with the adjacent teeth. Polychromatic blocks are available for anterior and posterior crowns. These blocks are specially layered in order to resemble the enamel, dentine and neck of a natural tooth.

CEREC Blocs – the original redefined

The new Sirona CEREC Blocs are ideal for chairside applications. Made of clinically proven feldspar ceramic, they are easy to polish and display outstanding enamel-like physical properties.

A special feature of CEREC Blocs: the new CEREC shade system

The new CEREC shade system unites the simplicity of VITA Classic and the diversity of Vita 3D Master. The 12 CEREC Blocs are available in six different shades – ranging from S0 (bleach) to S5 (dark) and with three different translucencies (opaque, medium, translucent). In addition, three polychromatic CEREC Blocs PC are available in various sizes.
THE CEREC MILLING UNITS – PRECISE, FAST AND QUIET

Chairside restorations created with textbook precision.

Simply clamp the ceramic block in place and press the start button. The twin-bur machining system has proved itself time and time again in practical applications. The CEREC MC XL and CEREC 3 milling units machine the ceramic restorations gently, yet with the utmost precision. Prior to the milling process, the software automatically measures and compensates for any tool wear. Both of the CEREC milling units can be installed anywhere in your dental practice – for example, in places where patients can watch the milling process “live”.

Select the block.
Clamp the block in place.
Start the milling process.
You have the choice between the high-end CEREC MC XL milling unit and the compact, proven and competitively priced CEREC 3 machine. Regardless of which model you choose, CEREC reduces stress and time pressures. The easy-to-use CEREC 3D software, the automated milling process, the clinical benefits of all-ceramic materials, treatment in a single appointment, positive feedback from patients – all these factors combine to maximize your job satisfaction. In addition, CEREC paves the way to increased earnings. Patient recommendations are a secure basis on which to build a successful future.

CEREC – the benefits in brief:

- **Speed:**
  - The CEREC milling units machine the occlusal surfaces and the base simultaneously, thus saving valuable time.
  - The milling speed of the CEREC MC XL unit has been optimized in order to cater to quadrant and bridges restorations in group practices. This higher speed offsets the additional time and effort needed for glazing and crystallizing cementable all-ceramic crowns.
  - CEREC MC XL delivers enhanced reliability. It is available with an optional second set of motors. In the event that one of the diamond burs should fail, the machine can continue milling without any interruption.

- **Precision:**
  - To ensure the utmost precision, the CEREC MC XL and CEREC 3 monitor tool wear prior to each milling cycle.
  - The CEREC MC XL delivers textbook precision in the range +/- 25 µ.
  - The sophisticated milling control system ensures the gentlest possible machining of the ceramic block.

- **Flexibility:**
  - Both milling units are easy to integrate into the dental practice.
  - The CEREC 3 milling unit is connected to the CEREC 3 image acquisition unit or CEREC Chairline via a serial cable or a wireless link.
  - CEREC MC XL is equipped with a LAN/WLAN interface and can be integrated into the practice computer network.
  - Both units are compact and easy to install anywhere in the practice (all they need is a mains power supply).
  - CEREC MC XL is extremely quiet. Patients enjoy watching the milling process – and pass on their positive impressions of CEREC to their friends and acquaintances.

- **Simplicity:**
  - The CEREC milling units are easy to operate.
  - The CEREC MC XL offers additional user-friendly features – for example, clearly structured menus, tool-free block clamping, and coloured illumination of the milling chamber (indicates the current status of the milling process).

- **Fully compatible:**
  All CEREC image acquisition units are compatible with all CEREC milling units as well as with the inLab and inLab MC XL systems.
CEREC 3 MC XL: precise, fast and quiet.
The increased speed and capacity of the CEREC MC XL are particularly advantageous if you want to complete several restorations in one treatment session or create long-term temporary bridges. The fast milling speed also facilitates the fabrication of conventionally cementable crowns made of lithium disilicate glass ceramics.

The CEREC 3 milling unit: compact, proven and competitively priced. In terms of capacity and speed, the CEREC 3 milling unit is tailored to single-tooth restorations. In terms of precision, it is the ideal choice for creating adhesively bonded inlays, onlays, partial crowns, crowns and veneers. CEREC 3 offers proven performance packaged in compact dimensions.
CEREC – AESTHETICS FOR EVERY REQUIREMENT
Results that are indistinguishable from natural teeth.

You and your patients can look forward to perfect results. You can tailor your services precisely to the aesthetic expectations and financial resources of your clientele – satisfaction guaranteed. Thanks to CEREC, you can keep all your options open – i.e. polishing, glazing, staining, or aesthetic fine-tuning in the dental lab.

Place the finished restoration.  Remove any excess material.  And feel pleased about the excellent outcome.
Attractive and sophisticated treatment outcomes: Dentists and patients have every reason to feel pleased.

The initial situation is characterized by massive enamel development deficiencies, discolouration of all teeth in the upper and lower jaws, malfunctions, as well as considerable aesthetic inadequacies.*

Functional stabilization of the premolars with the help of CEREC 3 all-ceramic restorations, combined with the perfect aesthetic rehabilitation of the anterior teeth in the upper and lower jaws.*

* Univ.-Prof. Dr. Gerwin Arnetzl, Graz University, Austria.
CEREC user since 1989
The initial situation is characterized by a partial gold crown attached to the first upper left molar.**

Following the restoration of the tooth, the polished ceramic surface of the adhesively bonded CEREC partial crown is considerably more aesthetic.**

** Privatdozent Dr. med. dent. Andreas Bindl, Senior Dentist at the Centre for Tooth-Coloured & Computerized Restorations, Zurich University. CEREC user since 1994
CEREC – CLINICAL STUDIES

Knowledge that boosts your confidence.

Still sceptical? Admittedly, CEREC sometimes sounds too good to be true. But on the contrary, CEREC is very much a practical reality. And to prove this point, we refer you to more than 250 scientific studies into the efficacy, biocompatibility and longevity of CEREC restorations.

Your patients place their trust in your expertise. For your part, you can place your trust in the expertise of renowned university professors and committed dental practitioners.

CEREC ranks as one of the most intensively scrutinized dental procedures – as evidenced in numerous clinical studies and a wide range of scientific publications. The facts speak for themselves. After 18 years, 84.4% of the CEREC chairside inlays and onlays are intact and functioning. In cases where the inlays and onlays were adhesively bonded, the success rate is between 90 and 95% after ten years. Follow-up examinations of around 5,000 restorations demonstrate that, in terms of their survival rates, CEREC restorations are at least on a par with cast gold – and clearly superior to composite fillings.

The most important findings at a glance:

Fact: There are more than 20,000 CEREC users worldwide.
Fact: They have already created more than 15 million CEREC restorations.
Fact: After ten years, CEREC inlays and onlays achieve a survival rate of 90–95%.
Fact: After five years, CEREC crowns have a survival rate of 95–97%.
Fact: After nine years, CEREC veneers display an impressive survival rate of 94%.

The facts are all in favour of CEREC:

An eighteen-year study of 1,011 inlays/onlays concluded as follows: “CEREC restorations (including those of a larger size) display outstanding longevity. In many cases, defect-oriented restorations and careful adhesive bonding provide the basis for dispensing with full crowns.”

A comparative study of the longevity of CEREC inlays and gold restorations concluded as follows: “In terms of longevity, CEREC inlays are on a par with gold restorations. Laboratory-fabricated ceramic restorations were inferior in this respect.”

A study of longevity and production costs concluded as follows: “From a medical and economic viewpoint, CEREC inlays are preferable to all other inlay types.”

Further information about the 250+ clinical studies of the CEREC procedure is available from www.sirona.com
CEREC – A PROCEDURE THAT PAYS DIVIDENDS

CEREC is a sound investment.

Committed CEREC users and all the relevant scientific studies come to the same conclusion: CEREC restorations are universally accepted. 98 percent of all patients rate the treatment outcomes as “very good” or “good”. More and more patients want high-quality restorations and are willing to pay more for this privilege – provided that they receive the desired quality of service. It therefore makes sense to invest in a technology that fulfils your requirements and those of your patients.
A worthwhile investment

Investing in CEREC pays dividends. You can perform high-value dental services in-house. As most of the processing steps can be delegated, your additional time input is kept to a minimum. CEREC increases your hourly costs by less than 5%. Only a few CEREC restorations per month are necessary in order to break even. In addition to positive patient feedback, you generate additional earnings that secure the long-term prosperity of your dental practice.

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**CEREC 3 cost example**

- **Hourly costs**
- **160 days/year, 7 hrs./day**

![Graph showing increase of hourly costs when purchasing a CEREC system]
SIRONA – UNIQUE WORLDWIDE SYSTEMS EXPERTISE IN DENTAL EQUIPMENT PRODUCTS

Sirona develops and manufactures a comprehensive range of dental equipment, including CAD/CAM Systems for dental practices (CEREC) and laboratories (inLab), Instruments and Hygiene Systems, Treatment Centers and Imaging Systems. Sirona manufactures high technology products that guarantee ease of use and a high return on investment – for the good of your practice and for the benefit of your patients. In this way, you can approach every challenge that you face, confident in the knowledge that: It will be a great day. With Sirona.