Abutment Solutions

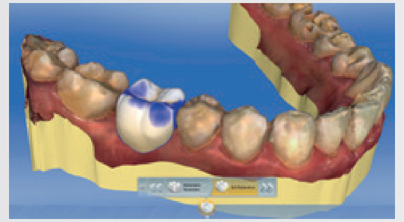
For customized implant restorations fabricated with CEREC® and inLab®

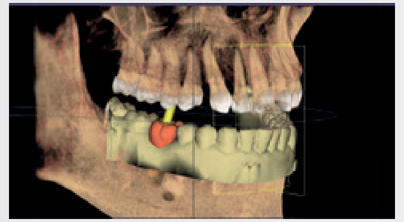
Digital all around.

ivoclar vivadent®
passion vision innovation

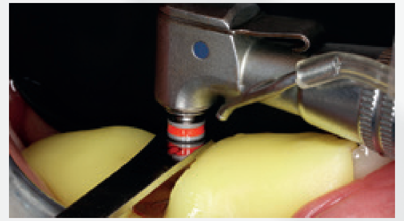
The digital treatment workflow

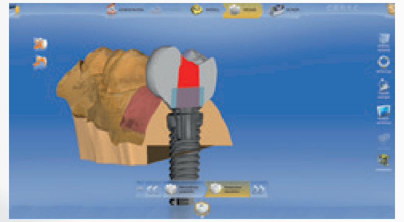

Digital impression taking


Digital planning

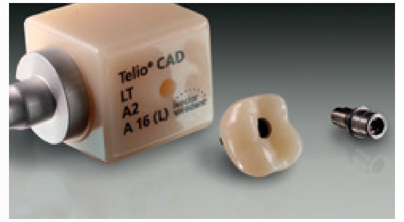

3D X-ray


Fabrication of the drilling template


Implantation*

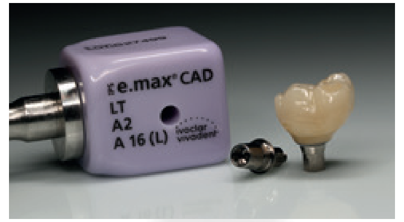

Implant design

Coordinated digital workflows in CAD/CAM technology open up new possibilities for implant-supported prosthetics – from impression taking to the final restoration – and ensure functional, highly esthetic, innovative and cost-efficient results. [1-3]



Temporary restoration made of Telio® CAD A16*


Shaped emergence profile following a temporary restoration*



Permanent restoration made of IPS e.max® CAD*


Placement - Check-up*

Together with Ivoclar Vivadent's innovative restorative materials, the CAD/CAM technique facilitates the planning and fabrication of implant-supported restorations – from temporary to permanent implant prosthetics. [2-4]

The following products are available for the fabrication of Abutment Solutions:

- Telio® CAD A16
- IPS e.max® CAD A14 / A16
- Multilink® Hybrid Abutment

*Source: Dr A. Kurbad [2], Germany


Dr S. Puri, USA

“Telio CAD A16 and IPS e.max CAD blocks optimally complement each other. Therefore, CAD/CAM users are provided with a complete digital workflow which enables them to reliably fabricate temporary restorations and permanent hybrid abutment crowns.”


Dr A. Kurbad, Germany

“Telio CAD A16 blocks close the gap in the system chain of the proven IPS e.max CAD Abutment Solutions by including the temporization stage. The temporary restoration can be incorporated immediately after the implantation procedure or after the healing phase. Furthermore, it offers many options in terms of soft tissue management. Therefore, Telio CAD A16 forms the basis for an esthetic and functional therapy result.”

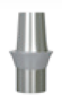
The temporary – key to a successful treatment

Hybrid abutment crown made of Telio CAD A16:

- Cemented to the TiBase, suitable for immediate load-bearing or after the healing phase [2; 4]
- Easily designed emergence profile [2; 4]
- Visualization of the permanent restoration
- Blocks are available in the size A16 and in nine LT shades (BL3, A1, A2, A3, A3.5, B1, B3, C2, D2)

Hybrid abutment crown

Telio® CAD
(PMMA)



TiBase

With Telio® CAD A16 from the temporary…

Telio® CAD A16 is designed for the CAD/CAM-supported fabrication of temporary hybrid abutment crowns. This 2-in-1 solution, i.e. crown and abutment combined, is used after the insertion of the implant and before the placement of the permanent restoration made of IPS e.max® CAD in the anterior and posterior region. [2; 4]

Telio CAD A16 supports the reconstruction of the gingiva during the first treatment phase. The surrounding soft tissue is individually formed. [2; 4]

The homogeneous, highly cross-linked PMMA block Telio CAD A16 features a predefined interface of size S or L for the direct cementation with the Dentsply Sirona TiBase.

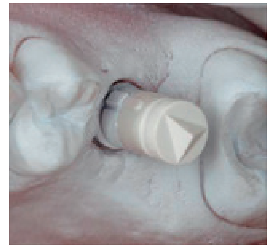
…to the final implant-supported IPS e.max® CAD restoration

Once a permanent solution is required, IPS e.max® CAD can be used to fabricate individual, implant-supported hybrid structures for single-tooth restorations using CAD/CAM technology. [1; 4; 5]

Depending on the indication, a tooth-shaded hybrid abutment with separate crown or a monolithic hybrid abutment crown can be fabricated. The particularly strong (530 MPa) [15] lithium disilicate glass-ceramic ties in seamlessly with the temporary Telio CAD restoration.

The IPS e.max CAD blocks A14 and A16 feature a predefined interface of size S or L for the direct cementation of the restoration with the Dentsply Sirona TiBase.

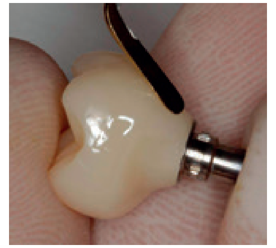
Digital, individualized patient treatment in detail:



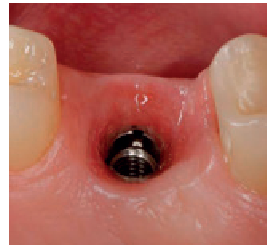
Clinical situation: Preparation for the digital, intraoral impression taking

Temporary hybrid abutment crown made of Telio® CAD A16

Seated Telio® CAD A16 restoration



Optional: Design of the emergence profile by composite layering



Shaped emergence profile after removal of the temporary

Milled abutment crown made of IPS e.max® CAD

Clinical try-in

Final, seated IPS e.max® CAD hybrid abutment crown

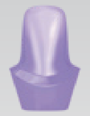
Source: Dr L. Enggist / Dr Stephanie Huth, Ivoclar Vivadent AG

The permanent restoration – flexibility during treatment

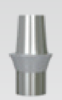
Hybrid abutment and hybrid abutment crown made of IPS e.max CAD:

- Excellent fit due to CAD/CAM processing technology [1-3]
- Esthetic restorations due to tooth-shaded hybrid abutment
- Hybrid abutment crown (2-in-1) offers functionality and efficiency [1; 4-8]
- Good biocompatibility with oral soft tissue [9-11]

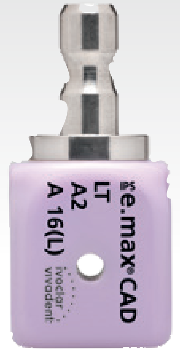
Hybrid abutment



IPS e.max® CAD MO or LT
(ceramic structure)



TiBase



Hybrid abutment crown

IPS e.max® CAD LT
(ceramic structure)

TiBase

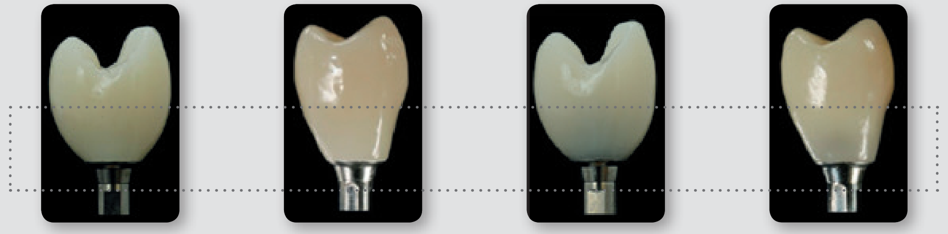
Multilink® Hybrid Abutment – strong bond and esthetics

Telio® CAD and IPS e.max® CAD restorations are cemented to the TiBase in only a few steps.

Multilink® Hybrid Abutment
The self-curing luting composite Multilink Hybrid Abutment is used for the permanent cementation of ceramic and PMMA structures made of e.g. IPS e.max CAD or Telio CAD to TiBases.

This results in:
- a permanent cementation due to high bond strength values; [12; 13]
- optimal esthetics due to high opacity levels; [12]
- easy handling due to the convenient Automix syringe. [12]

Telio® CAD A16 | IPS e.max® CAD | Telio® CAD A16 | IPS e.max® CAD



Optimum esthetics is achieved as the TiBase is entirely masked with **Multilink Hybrid Abutment**.

The opacity of other cementation materials is significantly too low.

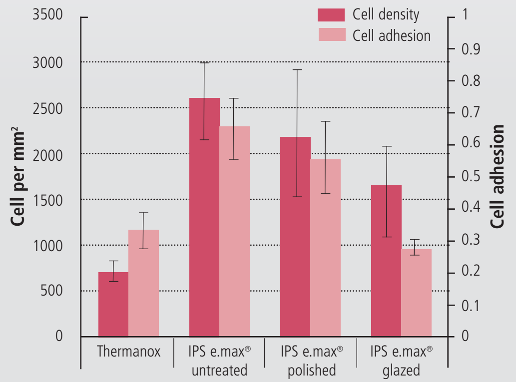
SR Connect
The bonding agent conditions the temporary restoration made of Telio CAD A16 and prepares it for the cementation with Multilink Hybrid Abutment.

Monobond® Plus
The universal primer conditions the TiBase and IPS e.max CAD restoration and prepares both for the cementation with Multilink Hybrid Abutment.

IPS e.max® CAD Abutment Solutions – biocompatible and reliable

Physicochemical and biological study on the properties of polished versus glazed lithium disilicate ceramics (IPS e.max®)
University of Reims, France
The surfaces of the specimens made of IPS e.max (LS_2) glass-ceramic were given one of the following three surface finishes: untreated, polished or glazed. Thermanox served as control. The cell reaction on the polished and glazed surfaces was analyzed using a cell culture model based on chicken epithelium.

Result
Cell adhesion and proliferation (i.e. density) were higher on the polished than on the glazed surfaces. No cytotoxicity occurred in any of the specimens. Therefore, the high-strength lithium disilicate ceramic is not only a promising solution for esthetic implant abutments but it is also particularly suitable for sealing the periimplant bond.



Cell growth on IPS e.max® specimens with differently treated surfaces (untreated, polished, glazed)

Source: C. Brunot-Gohin et al., see IPS e.max® Scientific Report Vol. 02/2001-2013

Study examining the reliability and failure types of ceramic abutments
New York University, USA
Specimens made of an IPS e.max (LS_2) hybrid abutment and screwed to an implant were prepared. IPS e.max (LS_2) crowns were cemented to the abutment.

Result
During the stress test in a universal testing machine, 100% of the hybrid abutments and hybrid abutment crowns made of IPS e.max (LS_2) glass-ceramic withstood a load of 280 N before fracture. The implant screw represented the system's weak point in all specimens. The screw fractured before any damage to the crown or abutment occurred.

Source: V.P. Thompson et al., [14], see IPS e.max® Scientific Report Vol. 02/2001-2013

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