

# Esthetics by design: the Straumann®<sup>®</sup>

The Straumann® Anatomic IPS e.max® Abutment<sup>1</sup> – a new flexible and esthetic restorative product resulting from technology synergy between Straumann and Ivoclar Vivadent

When two global leaders in dentistry join their know-how and understanding of customer needs, the result is likely to set new standards. Straumann is the partner of choice for esthetic restorations and innovations in implant dentistry. Ivoclar Vivadent is an innovator in all ceramics, specializing in ceramic materials and high esthetic restorations. The synergy of technologies between the two companies has resulted in a premium esthetic solution – the Straumann® Anatomic IPS e.max® Abutment.

DESIGN AND PRECISION  
MADE BY STRAUMANN AND  
IVOCLAR VIVADENT



# Anatomic IPS e.max® Abutment

The Straumann® Anatomic IPS e.max® Abutment is a standardized premium ZrO<sub>2</sub> ceramic abutment, designed for high esthetics and strength. Featuring a prepared mucosa margin for adaptation to natural soft tissue contour, formed by using the bone level gingival former designed for the Consistent Emergence Profiles™, the proven Straumann® CrossFit™ Connection and pre-shaded IPS e.max® zirconium dioxide material, it is engineered for flexible and reliable use.

The Straumann® Anatomic IPS e.max® Abutment is indicated for cement-retained crowns and bridges via mesostructure, and for direct veneered screw-retained crowns. With the use of the Straumann® Anatomic IPS e.max® Abutment the restorative team can apply an anatomically formed, ZrO<sub>2</sub> abutment and make first steps and experiences with highly esthetic, anatomic ceramic restorations. These experiences might build the basis for future use of advanced CAD/CAM technologies such as the Straumann CAD/CAM System.

## A strategic cooperation based on complementary strengths in restorative dentistry

The cooperation between Straumann and Ivoclar Vivadent builds on complementary strengths in restorative dentistry and the success of both companies to develop and provide solutions to the needs of dental professionals and patients around the world.

**Straumann** has pioneered many influential technologies in the fields of implant and restorative dentistry. A complete, comprehensive and transparent range of soft tissue and bone level implants and prosthetic products, combined with an innovative regenerative product range, make Straumann the partner of choice for many dental professionals around the world.

**Ivoclar Vivadent** is a global leader in the development and production of ceramic dental restorations, offering a comprehensive dental product portfolio and an innovative, premium ceramic product range at its core. Ivoclar Vivadent ceramic products are valued and used by dental professionals around the world for highly reliable and esthetic prosthetic solutions.

By combining core competencies and experiences, Straumann and Ivoclar Vivadent have jointly developed the new Straumann® Anatomic IPS e.max® Abutment, resulting in design and precision made by Straumann and Ivoclar Vivadent.

The Straumann® Anatomic IPS e.max® Abutment is exclusively sold by Straumann. Local Straumann organizations can be contacted for more details<sup>2</sup>.

<sup>1</sup> Initially available for RC connection only, material of the Straumann® Anatomic IPS e.max® Abutment is ZrO<sub>2</sub>.

<sup>2</sup> Please note that certain products and services mentioned in this TARGET article may not (yet) be available in all countries. Please contact your local Straumann subsidiary or distributor for information regarding product availability.

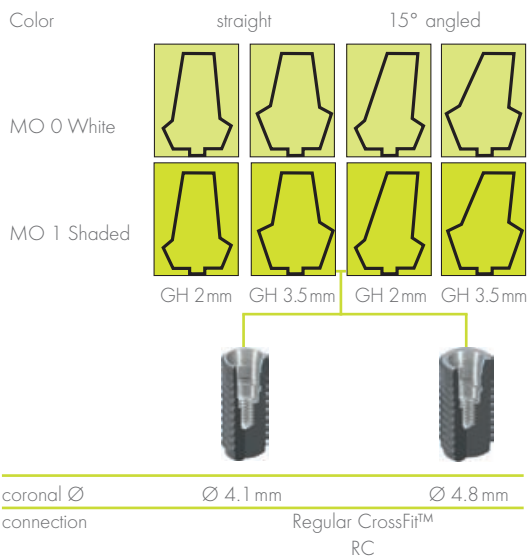
# High esthetic restorations with a high

The Straumann® Anatomic IPS e.max® Abutment is made of zirconium dioxide (ZrO<sub>2</sub>) and is offered on the Regular CrossFit™ Connection (RC) already known in the Straumann Bone Level Implant line. It is indicated for screw-retained single-tooth restorations as well as for cement-retained single-tooth and bridge restorations (via meso structure). With a choice of 2 colors (MO 0/MO 1), straight and angled designs, and 2 different gingival heights the Straumann® Anatomic IPS e.max® Abutment offers high flexibility in its application (see table).



The well-known Straumann® CrossFit™ PLAN Set can be used to plan restorations with the Straumann® Anatomic IPS e.max® Abutment.

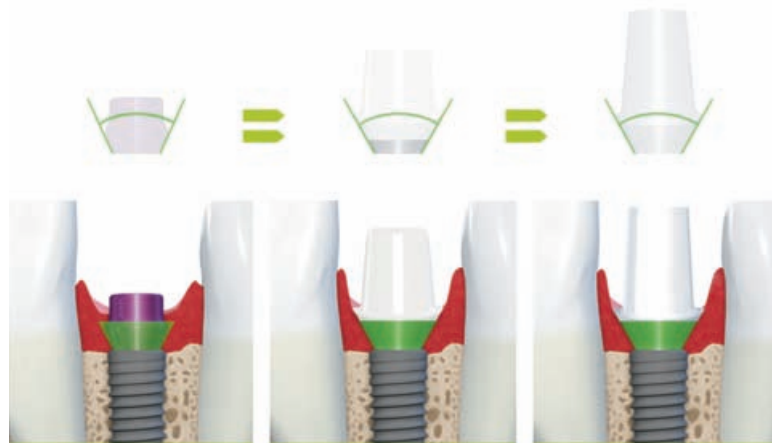
## Executing the same simplified and efficient processes of existing Straumann Abutments



The design of the Straumann® Anatomic IPS e.max® Abutment corresponds to the Straumann® Titanium Anatomic Abutment range. For this reason, the existing Straumann® CrossFit™ PLAN Set can be used for easy and fast intra-oral prosthetic planning. No additional investment in instruments and no adaptation to new procedures are required. Dentists and dental technicians working with the Straumann® Anatomic IPS e.max® Abutment can benefit from the simplified and efficient processes they are accustomed to and can anticipate a superior end result.

The Straumann® Anatomic IPS e.max® Abutment, with its anatomically pre-shaped design and its prepared mucosa margin, supports fast adaptation to the individual patient situation, thereby reducing the need for time consuming grinding in the dental laboratory and allowing dental technicians to work in a familiar, standardized restorative workflow.

# degree of flexibility



A consistent emergence profile from healing abutment to the final abutment results in simplified and optimized soft tissue management.

The prepared mucosa margin of the Straumann® Anatomic IPS e.max® Abutment supports easy and fast restorative procedures.

## Consistent Emergence Profiles™ – the state-of-the-art in soft tissue management

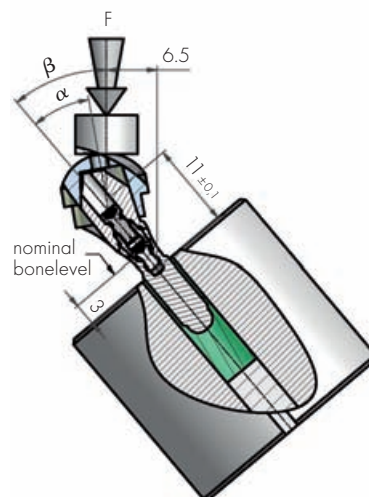
The Consistent Emergence Profiles™ concept of the Straumann® Bone Level Implant and prosthetic line are state-of-the-art in soft tissue management and post-surgical healing of the mucosal tissue around the implant. Due to matched emergence profiles of healing abutment, temporary abutment and final abutment, the soft tissue can regenerate without adapting to new profiles. When the Straumann® Anatomic IPS e.max® Abutment is used for a restoration, patients benefit from esthetic outcomes and painless treatments from start to finish.

A consistent emergence profile from healing abutment to the final abutment results in simplified and optimized soft tissue management.

## Flexibility in application through mechanical properties

The strength and machining characteristics of Ivoclar Vivadent's IPS e.max (ZrO<sub>2</sub>) dioxide ceramic make this material ideal for the fabrication of durable, high-precision and highly esthetic abutments. The material properties, in combination with the design and production process technology of the Straumann® Anatomic IPS e.max® Abutment, result in an excellent mechanical stability. To test the mechanical properties of the Straumann® Anatomic IPS e.max® Abutment, fatigue strength testing according to the ISO 14801 standard was conducted. With 2 million validation cycles at 2 Hz at the same benchmark

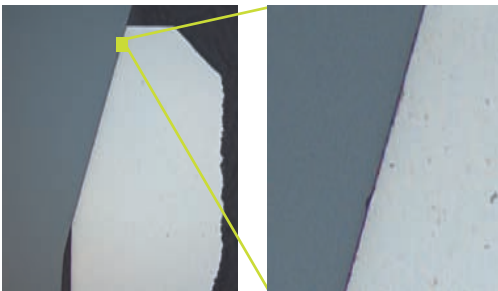
load as the titanium abutments, the Straumann® Anatomic IPS e.max® Abutment met all acceptance criteria. These proven mechanical qualities allow the restorative team high flexibility for indication and application.



The Straumann® Anatomic IPS e.max® Abutment successfully passed ISO-defined fatigue strength tests with over 2 million validation cycles.

The Straumann® Anatomic IPS e.max® Abutment allows the dental technician to directly veneer the restoration (CTE (100 - 500 °C)  $10,80 \pm 0,25 \cdot 10^{-6} K^{-1}$ ) with a layering ceramic like IPS e.max® Ceram or use the IPS e.max® ZirPress ingots for the press-on-technique, which reduces the time needed to build the final restoration.

The Straumann® Anatomic IPS e.max® Abutment is part of the Straumann® Bone Level Implant line, which features the unique CrossFit™ Connection. In addition to its mechanical benefits, the CrossFit™ Connection prevents bacterial

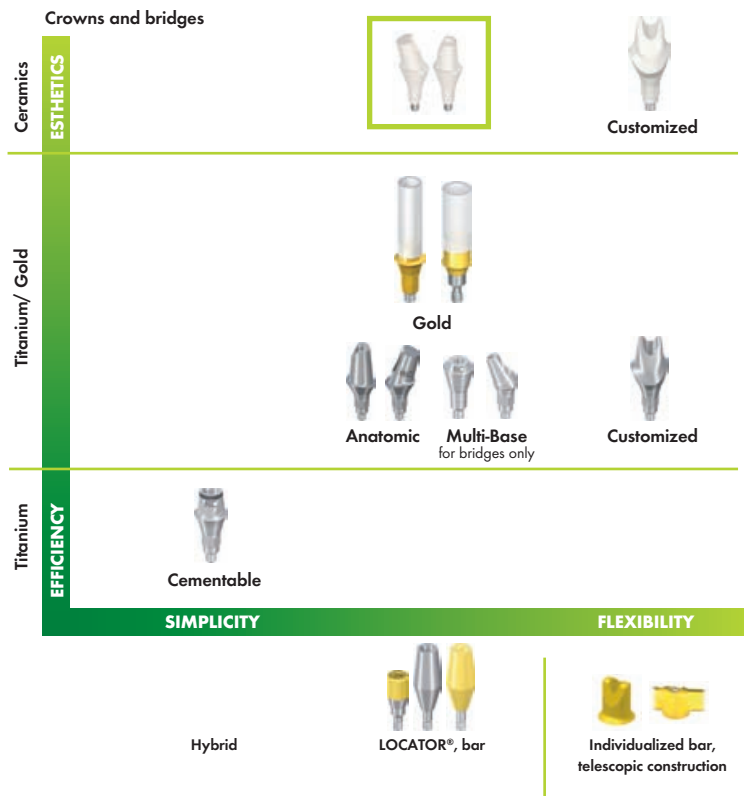


With the Straumann CrossFit™ Connection, the micro-gap between implant and abutment has a dimension of below  $1 \mu m^*$ , which is smaller than an E. coli bacterium.

\* $0,6 \pm 0,3 \mu m$  (n=36)

infiltration and related infections through its shape and through a minimal micro gap between implant and abutment of smaller than  $1 \mu m$ , which is below the industry standard. Studies indicate that dimension and shape of the micro gap can substantially reduce the risk of infection and related complications and are therefore one of the key factors for crestal bone preservation, which is the fundament for esthetic long-term results.

The Straumann® Anatomic IPS e.max® Abutment complements the Straumann® Dental Implant System in the field of bone level applications.



**Visible results: The esthetics of the Straumann® Anatomic IPS e.max® Abutment**

Dentists and dental technicians aim for highly esthetic results, which increase the likelihood that patients will be most satisfied with their treatment result. This can promote the involved dental professionals within their community because satisfied customers are one of the most effective advertisements for any dental business. In connection with this, the all-ceramic Straumann® Anatomic IPS e.max® Abutment enables highly esthetic results by avoiding shimmering through of metal and resembling natural tooth characteristics such as shape and color.

Clinical cases involving the Straumann® Anatomic IPS e.max® Abutment are in preparation and will be presented in the future issues of TARGET.

**The new Straumann® Anatomic IPS e.max® Abutment in the Straumann® Dental Implant System**

The Straumann® Anatomic IPS e.max® Abutment completes the prosthetic product range of the Straumann® Bone Level Implant line. With this new abutment, the restorative team has the possibility to choose from a range of standardized, anatomic all-ceramic abutments made by Ivoclar Vivadent

from the IPS e.max® (ZrO<sub>2</sub>) material. The prosthetic solution is still selected on basis of the patient's specific situation and clinical indication, but now with the option of using an all-ceramic pre-shaped abutment.

By using the Straumann® Anatomic IPS e.max® Abutment the restorative team can apply an anatomically formed, ZrO<sub>2</sub> abutment and make first steps and experiences with highly esthetic ceramic restorations. That demand can be fulfilled with cemented all ceramic crowns. These can be zirconia-based crowns (IPS e.max® ZirCAD framework) veneered with the highly esthetic layering ceramic IPS e.max® Ceram or fully anatomic pressed/milled lithium-disilicate ceramic like IPS e.max® Press or IPS e.max® CAD.

These experiences with highly esthetic all-ceramic crowns and the Straumann® Anatomic IPS e.max® Abutment might build the basis for future use of advanced CAD/CAM technologies such as the Straumann CAD/CAM System.

Characteristics	Advantages
2 color shades	Better esthetics through flexible adaption to patient teeth color and anatomy.
2 gingiva heights	
Straight and angled form	Flexible adaption to patient dental anatomy and implant placement.
CrossFit™ Connection	The self-guiding connection makes handling easier, ensures precision and offers long-term stability as well as restorative flexibility.
Consistent Emergence Profiles™	<ul style="list-style-type: none"> <li>• Optimizes and simplifies the soft tissue management process throughout the treatment</li> <li>• Eases the fabrication of temporary restorations</li> </ul>
Integrated into the Straumann® Dental Implant System	The choice for dentists and dental technicians to select the best solution under clinical and economic considerations.
CrossFit™ PLAN Set	Use of the proven and familiar Straumann® CrossFit™ PLAN Set <ul style="list-style-type: none"> <li>• No new investments necessary</li> <li>• Application of the same prosthetic procedures, no change required</li> </ul>
Direct veneering option	The Straumann® Anatomic IPS e.max® Abutment allows the dental technician to directly veneer the restoration or use the press-on technique, which reduces the time needed to build the final restoration.
IPS e.max® (ZrO <sub>2</sub> ) material	High quality zirconium oxide ceramic from Ivoclar Vivadent with outstanding esthetic and material properties. Supports first experiences with anatomically formed ceramic abutments which might be a basis for possible future use of advanced CAD/CAM technologies such as the Straumann CAD/CAM System.

### Summary

The Straumann® Anatomic IPS e.max® Abutment enables dentists and dental technicians to provide patients with a highly esthetic restorations with a high degree of flexibility.

### Availability

The Straumann® Anatomic IPS e.max® Abutment will be available for use with the Straumann® RC Bone Level implants as of July 2009<sup>2</sup>. Clinical cases are in preparation and will be presented in future TARGET issues together with a comprehensive conception of the IPS e.max® system.

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