



# update



02|2009

NEWS FROM THE DENTAL WORLD BY IVOCCLAR VIVADENT

## Editorial



Dear Customer

With the present issue of Update, we are pleased to present to you a vast array of innovations that will both provide your patients with enhanced esthetics and offer you simplified work procedures. These innovations open up unheard of possibilities as regards time and resources management and will thus improve your professional results.

Read about the outstanding polishability and convincing, easy-to-follow layering technique of the new composite restorative IPS Empress Direct.

Or shift one gear up with the self-adhesive, universal resin cement SpeedCEM, which offers ease of use and exceptional versatility.

You may also be surprised to learn that IPS e.max CAD lithium disilicate crowns are more robust than crowns made of veneered zirconium oxide. The material is thus ideally suitable for the fabrication of single-tooth restorations.

In this issue of Update, you can find these and many other innovations which have been developed with your success in mind.

The time is right and the opportunities are right in front of you!

Yours truly

Christian Brutzer  
Chief Sales Officer  
Ivoclar Vivadent AG

## Impressive esthetics IPS Empress Direct provides outstanding results



The new composite material IPS Empress Direct offers the esthetics of a ceramic combined with the convenience of a composite – due to a wide range of shades, various levels of translucency and good processing properties.

The light-curing nano-hybrid composite IPS Empress Direct is based on the latest composite technology and was developed in cooperation with researchers, dental professionals and colour specialists. Due to the lifelike shades and opacities, natural-looking and esthetic results can be achieved for all indications.

### Anterior esthetics

The properties of IPS Empress Direct are shown to full advantage in demanding anterior restorations in particular. The wide range of 32 dentin and enamel shades in five levels of translucency allow teeth to be faithfully reconstructed. Two high-end shade guides ensure that the quality of the shade selection, as the starting point of every highly esthetic restorative procedure, is consistent.



The new composite  
IPS Empress Direct

### Convenient handling

IPS Empress Direct offers high stability, shade fidelity and excellent modeling and polishing properties. The material's handling is also exceptional: As the natural dentin is simply replaced by Dentin material and the enamel by Enamel material, there is no need for a "recipe". Even the physical properties meet the highest demands, such as an optimum radiopacity and a low sensitivity to light. As a result of the low light sensitivity, enough time is available to design the restorations without pressure.

IPS Empress Direct is available both in syringes and Cavifils.

## IPS Empress® System

Press

CAD/CAM

Composite



IPS Empress Esthetic



IPS Empress CAD



IPS Empress Direct

IPS Empress Direct, the new addition to the IPS Empress System

# Exact dosing translates into considerable savings

The newly designed VivaPen allows AdheSE One F to be precisely dispensed



Because of its new design, the VivaPen from Ivoclar Vivadent is now even easier to manipulate and enables the fluoride-releasing adhesive AdheSE One F to be applied very sparingly.

Ivoclar Vivadent supplies the dental adhesive AdheSE One F in the VivaPen delivery form. By launching the VivaPen in a new design, Ivoclar Vivadent is providing dental professionals with a tool that is even easier and more convenient to use than the previous version. The VivaPen is equipped with a click mechanism which allows AdheSE One F to be dispensed in a precise and economical fashion. A snap-on cannula is attached to the front part of the VivaPen. With this cannula, AdheSE One F can be applied exactly where needed and gently brushed into the cavity surfaces. The fill-level indicator in the rear part of the VivaPen allows users to check the remaining amount of AdheSE One F.

The VivaPen contains 2 ml of AdheSE One F, which is sufficient for approx. 120 applications.

## F stands for fluoride

AdheSE One F is a self-etching, single-component adhesive which is used in the fabrication of direct restorations. A source of fluoride has been added which enables fluoride ions to be released from the material. In addition, AdheSE One F offers two big advantages: It achieves a particularly high bond strength on enamel and it can be stored at room temperature without compromising its quality.



The VivaPen snap-on cannula allows the adhesive to be applied precisely and all types of cavities to be accessed with ease.



Image: Dr. A. Pfannkuch



Image: Dr. N. Bartling



Image: Dr. L. Enggist

# A new powerful family member

bluephase 20i is the latest addition to the bluephase range



LED for every use



The bluephase unit featuring an intensity of 1,200 mW/cm<sup>2</sup> is still a fairly recent product on the market, and yet an even more powerful unit, bluephase 20i with an intensity of 2,000 mW/cm<sup>2</sup>, has already been introduced.

Due to the integrated "polywave LED" technology, the battery-operated bluephase 20i offers a halogen-like broadband spectrum. Unlike many conventional LED curing lights, this unit achieves a broad light spectrum ranging from 380 to 515 nm. bluephase 20i is therefore suitable for curing all photoinitiators and materials. It uses the programs known from the classic bluephase: High Power, Low Power and Soft Start. The additional Turbo program with an intensity of 2,000 mW/cm<sup>2</sup> allows users to cure light and dark composites in a maximum of five seconds – while avoiding damage to the pulp or the soft tissue. The integrated fan enables the light to be operated without interruption. Therefore, adhesively cemented IPS Empress and IPS e.max restorations can be polymerized in virtually no time. Finally, bluephase 20i stands out with its proven Click&Cure option and a three-year equipment warranty (one year for the battery).



The high-performance bluephase 20i curing light



The four easy-to-use programs: Turbo for maximum performance, High Power for fast curing, Low Power for curing in areas near the pulp and Soft Start for stress-reduced polymerization.

# Programat P700/G2

The second generation of the high-end furnace



The second-generation Programat P700/G2 furnace offers a whole range of new features. These include the CSP function (Cooling Shock Protection), an energy saving mode (Power Saving Technology), an optimized user interface as well as a voice output device.

The Programat P700 of the second generation represents a definite highlight among the various ceramic furnaces. The integrated Cooling Shock Protection relies on a specifically adjusted opening and cooling process, which prevents cracks and tension from forming within the ceramic. In addition, the furnace has been equipped with new energy saving technology which cuts power consumption in the stand-by mode by up to 40%. This reduces power costs and at the same time helps protect the environment.

Moreover, the new P700 stands out due to its new, optimized user interface: Modern symbols in combina-

tion with well-structured programs dramatically simplify the operation of the furnace. The voice output feature provides verbal feedback and directions to assist users during operation.

### Based on time-tested features

Apart from these innovations, the appeal of the Programat P700 continues to lie in the tried-and-tested attributes such as QTK muffle technology, automatic double-range calibration, JPG image representation, integrated MP3 player as well as the Optical Status Display, which informs users about the current status of operation.



Programat P700/G2 with new features



The power-saving key of Programat P700/G2



The software allows users to view patient images on the display.

## Power Saving Technology

Higher efficiency due to lower power consumption



Ivoclar Vivadent is fitting its new equipment generation with energy saving technology to meet future needs.

Due to the power-saving key or selectable power-saving function, the new Programat P700 is capable of cutting energy consumption by up to 40% in the stand-by mode.

### Two advantages in one!

This feature not only reduces your energy costs, but also helps protect the environment. Therefore, every appliance equipped with Power Saving Technology features a green label on the back.



Power Saving Technology reduces energy costs and helps protect the environment.

# New software versions

for Programat CS and Programat EP 5000



The tried-and-tested Programat ceramic furnaces are continuously being upgraded with new software versions. For Programat CS and Programat EP 5000, two new software versions have been developed. As a result, working with these units is now even more efficient.

IPS e.max CAD Speed Program – this is the name of the new software version for Programat CS, the furnace for chair-side applications. The time required for the crystallization of objects in the crystallization furnace is shortened with this software. For the top-end press furnace Programat EP 5000, the software version 3.3 is now available. This software features additional IPF (intelligent press function) programs and therefore reduces the time required for pressing objects by up to 45%.

The new software versions can be downloaded from [www.ivoclarvivadent.com](http://www.ivoclarvivadent.com) free of charge and installed on the ceramic furnace using a USB memory stick or a USB cable.



Programat CS



Programat EP 5000

# New equipment service passport

Ivoclar Vivadent expands the service package offered to Programat users



It is Ivoclar Vivadent's stated objective to continue being a reliable partner for the customer also long after a furnace has been sold. The company is therefore continually expanding its service offerings – the latest achievement is the equipment service passport.

The personal equipment service passport for Programat customers is used to keep track of all service and maintenance work as well as calibrations of the firing chamber. In addition, the booklet contains valuable tips and notes on the maintenance of the furnace.

Other highlights of the service package for Programat customers include:

- All-round check of the operational performance of the ceramic furnace at all Ivoclar Vivadent After Sales Service facilities
- Up to three years warranty on Programat furnaces
- Download centre for information about equipment at [www.ivoclarvivadent.com](http://www.ivoclarvivadent.com)
- ... and much more

## Why is routine equipment maintenance important?

Every ceramic furnace contains expendable parts, such as the heating element, which are subject to wear depending on the type and frequency of use. Regular maintenance procedures at an Ivoclar Vivadent Service Centre eliminate this problem and ensure optimum firing results. Information on the intervals at which maintenance work should be conducted can be found in the Operating Instructions.

# Use the Programat Services Package to enhance your success.

A reliable partnership that extends beyond the equipment purchase!



A wide range of services for Programat customers

# Direct and time-saving cementation

with the new self-adhesive resin cement SpeedCEM



SpeedCEM is a self-curing resin cement. In conjunction with optional light-curing, it achieves shear bond values of 11.0 MPa on dentin and 17.8 MPa on enamel.

The versatile resin cement SpeedCEM can be used for all-ceramic (e.g. IPS e.max), metal, metal-ceramic and fibre-reinforced composite restorations.

## Quick application

The self-adhesive material is applied directly from the double-push syringe. In contrast to products supplied in mixing capsules, preparation with activation and mixing devices is not required. In addition, separate etching and bonding procedures are eliminated. SpeedCEM combines the easy processing characteristics of conventional cements with the advantages of adhesive luting composites. Compared to competitor

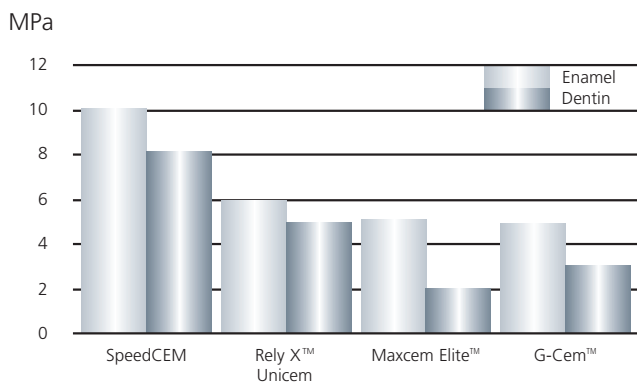


products, it offers outstanding material properties.

## A suitable luting material for every situation

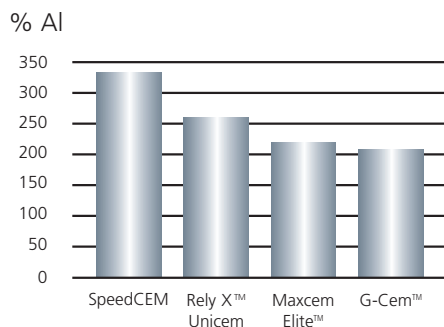
The family of luting materials from Ivoclar Vivadent is now complete. The proven Variolink product range stands for maximum esthetics, while the Multilink range is known for very high bonding values and universal suitability. The new self-adhesive SpeedCEM is particularly suitable for quick conventional cementation of e.g. IPS e.max restorations.

## SHEAR BOND STRENGTH (after self-curing)



Shear bond strength test  
ISO, TS-11405  
R&D, Ivoclar Vivadent AG  
December 2008

## RADIOPACITY



Test method acc. to  
ISO 4049:2000,  
R&D, Ivoclar Vivadent AG  
December 2008

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# IPS e.max Press Invex Liquid



IPS e.max Press Invex Liquid is used to remove the reaction layer which forms on

the surface of IPS e.max Press and ZirPress restorations during the press procedure.

## New, small delivery form

In addition to being offered in one-liter bottles, IPS e.max Press Invex Liquid is now also available in a 50-ml test version. The 50-ml bottle is supplied in a container to facilitate transportation. This container seals tightly and can also be used for cleaning and storage.



IPS e.max Press Invex Liquid in the 50-ml bottle

## Container for improved handling

For users of the one-liter bottle, special Invex Liquid containers (empty) are now available. These handy and acid-resistant containers are suitable for immersing pressed restorations in Invex Liquid and for storing used liquid. Moreover, the strainer insert simplifies rinsing of the restorations after the cleaning process is finished. It is even possible to neutralize Invex Liquid in this container. To store the liquid, the container is sealed with the lid provided.



Sealed IPS e.max Press Invex Liquid container



Cleaning of restorations in the Invex Liquid container

# Excellent performance of IPS e.max® lithium disilicate



The New York University College of Dentistry conducted a step-stress fatigue test series with crowns.

The researchers in the Department of Biomaterials and Biomimetics at New York University College of Dentistry (NYU) determined through mechanical mouth-motion simulator testing that crowns made of IPS e.max CAD lithium disilicate are more robust than veneered zirconium oxide crowns.\*

## Crowns in the mouth-motion simulator

The NYU researchers used the mouth-motion simulator test to compare the durability of IPS e.max CAD lithium disilicate fully anatomical crowns to veneered zirconium oxide crowns. By replicating actual forces exerted in the human mouth, this test provided a more realistic assessment of how ceramic materials hold up to the forces of chewing. Directed loads over thousands of cycles provided clinically relevant results until the fracture of crowns – Fractures and chippings were considered failures.

## Reliable IPS e.max CAD lithium disilicate crowns

The result of the step-stress testing

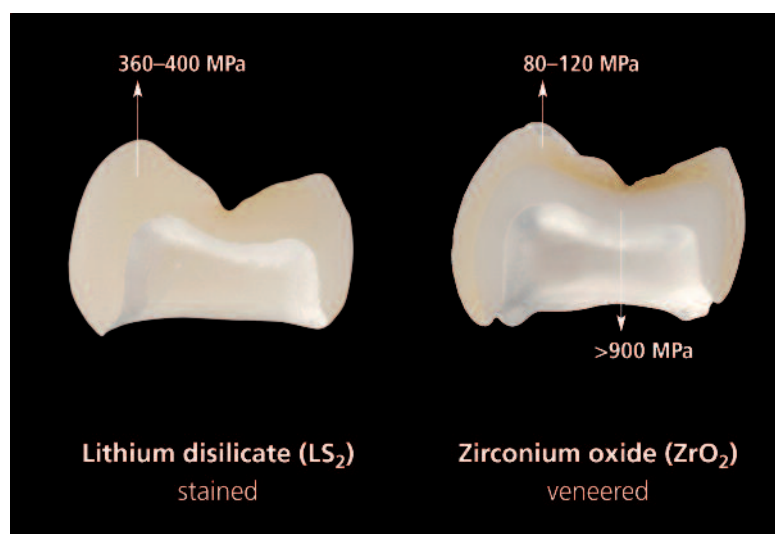
of various all-ceramic crowns revealed the following: Veneered zirconium oxide shows a failure rate of 90% at loads of 350 N and 100,000 cycles; for IPS e.max lithium disilicate, however, no failures were observed by loads of 1,000 N and 1 million cycles.

## Conclusions from the study

IPS e.max CAD lithium disilicate full-coverage crowns can be expected to show excellent clinical performance in terms of fractures and chippings. These results are similar to those of previous studies, which indicates that crowns made of IPS e.max CAD lithium disilicate are more robust than veneered zirconium oxide crowns.

### \* Mouth motion fatigue and durability study

Petra C. Guess, Ricardo Zavanelli, Nelson Silva and Van P. Thompson, NYU, March 2009



Monolithic lithium disilicate crown (left) and veneered zirconium oxide crown (right)

# Oral health care management for implant patients



Implant restorations require regular professional care in the dental practice. This is of

utmost importance in order to maintain their impeccable esthetics and function in the long term.

With Implant Care, Ivoclar Vivadent offers a coordinated product program which is adjusted to the specific requirements of implant patients: Complex structures and the sensitive peri-implant tissue can be maintained in an effective, yet gentle manner.

OptraGate is used to retract the lips and cheeks, thus facilitating the treatment of complex superstructures. Plaque Test discloses bacterial biofilms. Proxyt fine prophylaxis paste keeps surfaces smooth and free of plaque. Cervitec Plus, a varnish containing chlorhexidine, inhibits the activity of bacteria. Cervitec Gel, which contains chlorhexidine and fluoride, is used at home as a complement to the professional care measures.



Complex superstructures require lifelong professional care to preserve their high quality (Fig.: K. Gmür, Dental Technician, & R. Watzke, Dentist).

**Implant Care**

- OptraGate** the flexible lip and cheek retractor
- Plaque Test** the fluorescent disclosing liquid
- Proxyt** the fine prophylaxis paste with RDA 7
- Cervitec Gel** the oral health care gel with chlorhexidine and fluoride
- Cervitec Plus** the protective varnish with chlorhexidine

Implant Care – all-round protection for implant restorations

# Investment ring system and coordinated alloys



The new, large 300 g investment ring offers you new possibilities.

The large 300 g investment ring allows users to fabricate long-span bridges or several small restorations – in one working step. The following table provides an overview of the

Ivoclar Vivadent alloys which are compatible with the investment ring system. The system consists of a 100 g, 200 g and a 300 g investment ring.

**Compatibility table: alloys and IPS InLine / IPS InLine PoM**

Alloy	IPS InLine	IPS InLine PoM IPS Investment Ring 100/200 g	IPS InLine PoM IPS Investment Ring 300 g
<b>High-gold</b>			
Brite Gold	✓	–	–
Brite Gold XH	✓	–	–
Golden Ceramic	✓	–	–
Aquarius Hard	✓	✓	✓
Aquarius	✓	–	–
IPS d.SIGN 98	✓	✓	–
Y	✓	–	–
Aquarius XH	✓	✓	✓
Y-2	✓	–	–
Y-Lite	✓	✓	✓
Sagittarius	✓	✓	✓
Y-1	✓	–	–
IPS d.SIGN 96	✓	✓	–
<b>Reduced gold</b>			
IPS d.SIGN 91	✓	✓	✓
W	✓	–	–
W-5	✓	–	–
Lodestar	✓	✓	✓
W-3	✓	✓	✓
Leo	✓	✓	✓
W-2	✓	✓	✓
<b>Palladium-based</b>			
Capricorn 15	✓	–	–
IPS d.SIGN 84	✓	✓	✓
Capricorn	✓	✓	✓
Protocol	✓	✓	✓
IPS d.SIGN 67	✓	–	–
Spartan Plus	✓	✓	–
Spartan	✓	✓	–
Aries	✓	–	–
IPS d.SIGN 59	✓	–	–
IPS d.SIGN 53	✓	–	–
W-1	✓	–	–
Callisto CP+	✓	✓	✓
<b>Implant alloys</b>			
Callisto Implant 78	✓	✓	✓
IS-64	✓	–	–
Callisto Implant 60	✓	–	–
<b>Base metal</b>			
Pisces Plus	✓	✓	✓
4all	✓	✓	✓
IPS d.SIGN 15	✓	✓	✓
IPS d.SIGN 30	✓	✓	✓
Colado CC	✓	✓	✓

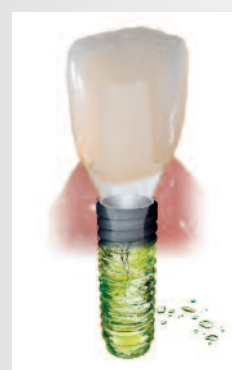
# Straumann® Anatomic IPS e.max® Abutment

The strong link between implant and restoration



The Straumann Anatomic IPS e.max Abutment is the result of the successful cooperation between

Ivoclar Vivadent and Straumann. This collaborative agreement combines Ivoclar Vivadent's strength in the field of high-quality and highly esthetic ceramic materials and final restorations with Straumann's expertise in the production of dental implants and restorative solutions.



IPS e.max ZirCAD is the materials basis for the Straumann Anatomic IPS e.max Abutment. The shades of the abutments according to the IPS e.max shade system provide the optimum prerequisites for the

fabrication of highly esthetic restorations.

Straumann Anatomic IPS e.max Abutments are pre-shaped standardized implant prosthetics that can be modified both in the dental laboratory and the practice. The abutments are available in two gingiva heights, two shades and two configurations (straight and angled). The sintered abutment can be customized to the specific clinical situation with materials from the IPS e.max product range. Therefore, a solution is offered in which the entire restorative construction consists of IPS e.max materials. This creates a natural-looking basis for an all-ceramic restoration.

These abutments made of high-performance materials offer multiple advantages to dental professionals and patients, including enhanced esthetics and efficiency and heightened predictability of the results.

The Straumann Anatomic IPS e.max Abutment is distributed by Straumann. IPS e.max is a registered trademark of Ivoclar Vivadent AG. Straumann is a registered trademark of Straumann Holding AG.

# High-quality, base-metal alloy

## The Colado® CC alloy



The cobalt-chromium alloy Colado CC, which can be veneered with ceramics and composites, is an interesting alternative to palladium-based alloys.

Colado CC features ideal physical properties and provides convenient handling. Due to its good melting properties, this alloy can be cast with all customary casting devices and the torch. The homogeneous microstructure of the alloy imparts a high resistance against corrosion and facilitates further processing and polishing. Colado CC shows high bonding values to IPS d.SIGN, IPS InLine/IPS InLine PoM and SR Adoro. Framework and veneering materials are ideally coordinated. As a supplier of restorative materials for implant-retained dental restorations, Ivoclar Vivadent offers the right product for every treatment step. Colado CC is excellently suitable as a framework material for implant superstructures.



Colado CC – economical and user-friendly

# Speeding up the procedure

## Saving time through Tetric N-Bond Self-Etch

Tetric N-Bond Self-Etch is the new self-etching single-component adhesive for the direct restorative therapy. A single layer of the acetone-free Tetric N-Bond Self-Etch material is sufficient to establish a sound bond between the composite and the enamel or dentin. Due to monomers which are resistant to hydrolysis, it is possible to store Tetric N-Bond Self-Etch at room temperature without compromising its quality.



The self-etching single-component adhesive Tetric N-Bond Self-Etch.

# The specialist in the cementation of implants

## Multilink Implant – The adhesive luting composite



Multilink Implant is a self-curing luting composite with light-curing option which permanently and adhesively bonds restorations to implant abutments. The material's very low solubility in water and its high mechanical strength enable it to establish a durable bond between the restoration and the abutment.

### Strong partners

When used in combination with the new universal primer Monobond Plus, Multilink Implant produces a strong bond – independent of the material from which the restoration or the implant abutment are made. The innovative combination of three different functional groups – silane methacrylate, phosphoric acid methacrylate and sulphide methacrylate – enables a strong and durable bond to be established to any restorative material. Therefore, there is no need to purchase and store different primers for different materials. Monobond Plus simplifies the bonding procedure, because a uniform reaction of 60 seconds is needed on all the various material surfaces. In addition, Monobond

Plus does not require cool storage. The universal primer can be stored at room temperature.

### Easy handling, high resistance to penetration by bacteria

Multilink Implant not only stands out due to its excellent bonding properties. Easy clean-up of excess cement as well as direct dispensing from the automix syringe facilitate the application of the material. Moreover, since an adhesive luting protocol is used, bacteria are prevented from penetrating the cement joint between the abutment and the restoration. The indication-related range of shades enables practitioners to achieve outstanding esthetic results – even if the restoration margin is visible.



Multilink Implant offers easy handling



Monobond Plus: One primer for all types of restorative materials.

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