



## 2014 Volume 3

The quarterly newsletter of  
"D&S Dental Laboratory, Inc.

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# INCISAL EDGE

## INSIDE THIS ISSUE

Product Spotlight  
PFM & Full Cast Crowns  
**pg. 2**

Hansen Dental Lab  
Partners With D&S  
**pg. 2**

Technician's Tip(s) of  
the Month  
**pg. 2**

Learn on the Links  
Trappers Turn Golf Club  
**pg. 3**

*Real World Endo*<sup>®</sup>  
New Dimension in  
Endodontics  
**pg. 3**

2014 Mission of Mercy  
in Green Bay  
**pg. 4**

**PLEASE NOTE**  
**D&S Dental Laboratory**  
**Will be Closed the**  
**Following Dates in 2014**

**September 1 -**  
*Labor Day*

**November 27 & 28 -**  
*Thanksgiving*

**December 25 & 26 -**  
*Christmas (Observed)*

## WORKING WITH E.MAX<sup>®</sup>

Nationally, few fixed products have gained the popularity level attained by IPS e.max<sup>®</sup> over the past 5+ years. Ivoclar has poured resources into the marketing of this product over the years, and the result has been an exponential increase in the usage as a replacement for the traditional PFM.

There are many reasons why doctors have chosen e.max<sup>®</sup>, but the main reason is esthetics. These restorations tend to be extremely translucent and shade matches are generally very accurate. For single, anterior restorations, or anterior three-unit bridges with narrow pontics, there are few options better than e.max<sup>®</sup>. In addition, as a glass ceramic (lithium disilicate), e.max<sup>®</sup> is significantly stronger than its predecessors, Empress and Empress II. At D&S, we manufacture a large number of e.max<sup>®</sup> crowns each month, and the general results are everything expected of the product.

When working with e.max<sup>®</sup>, however, there are a few key recommendations from the manufacturer as well as the laboratory to help ensure a successful outcome. While e.max is strong for a glass ceramic, overall it is still a brittle material. Pressed e.max<sup>®</sup> (more on this later) is less than 400MPa as a monolithic material, whereas most monolithic Zirconias are greater than 1,000MPa. Because of this, it must be handled appropriately or the likelihood of failure will increase dramatically.

The minimum occlusal clearance needed for an e.max<sup>®</sup> prep is 1.5mm, which must be maintained. In addition to required clearance, the margin design and prep itself are crucial to the success of the restoration. A rounded shoulder or chamfer margin is recommended, and all internal line angles must be smoothly rounded to reduce the opportunity for fracture. Knife edge preps are not well-suited for e.max<sup>®</sup> crowns, nor are posterior restorations with minimal clearance. Finally, bruxers and subgingival preps are both contra-indicated by the material manufacturer.

When seating, certain care must also be taken to make sure stress is not placed on the material that could lead to fracture. Chairside adjustments must be made with

plenty of air and water to keep the material cool. As the material heats up during adjusting, micro-fractures can be introduced inside the crown that will eventually grow and lead to failure. Unlike Zirconia, where a fine grit diamond is recommended for adjusting, to adjust e.max<sup>®</sup>, Ivoclar recommends a coarse grit diamond. For cementation of a full restoration on a retentive prep, essentially any type of cement can be used including RMGI.

Another important factor to consider when working with your laboratory is that not all "e.max<sup>®</sup>" crowns are the same. While e.max<sup>®</sup> is a product, it is also a material, and there are several ways labs can handle the material that will result in different properties of the final restoration. At D&S, we design the final restoration to full contour, mill it in wax, and then press our e.max<sup>®</sup> from an ingot of shaded lithium disilicate. Pressing results in the strongest e.max<sup>®</sup> restoration possible (approximately 400MPa), and the fits are generally better than the milled versions. Milled e.max<sup>®</sup> are designed, and cut directly from a block of lithium disilicate. The strength of a milled e.max<sup>®</sup> is closer to 300MPa. Whether it is milled or pressed, e.max<sup>®</sup> is sold both as a monolithic crown (one solid material with no veneering), or as a veneered crown. Most of the time, anterior e.max<sup>®</sup> are cut back and layered with porcelain on the facial in order to obtain maximum translucency and shade matching. However, the addition of the cutback weakens the material significantly, so it is generally only done in the esthetic zone. Posterior e.max<sup>®</sup> are left as monolithic crowns for maximum strength. So, your "e.max<sup>®</sup>" crown could be milled or pressed, monolithic or layered, and any combination of four. All combinations result in restorations with varying properties, so find out from your lab exactly what you are getting.

In the end, e.max<sup>®</sup> in general is an outstanding restoration if handled correctly by the laboratory and the dentist. It must be used for the proper indications, prepped appropriately, fabricated correctly by the lab, and adjusted with care by



continued on back

## PRODUCT SPOTLIGHT PFM & FULL CAST CROWNS

It is certainly common knowledge that metal based restorations have been on the decline over the past five years. In 2010, the year we introduced our first ZR Crown™, PFMs & FCCs accounted for over 70% of our fixed business. By the end of last year, that number was under 40% and dropping. Today, we only use metal in 33% of all the restorations produced by our laboratories. There are many reasons for the shift, and advantages to today's ceramic materials. Cost is certainly a big factor, but ceramics are also generally superior in esthetics and fit, they don't conduct temperature, and you can X-ray through them.

However, there are certainly many doctors who still prefer the tried and true products that have served so well for years. Even though the percentage of our work devoted to metal is down, the number of units being produced is still a very significant amount. Fortunately, for those who do prefer metal, our laboratory has been able to combine some of the advantages of today's CAD/CAM technology and state-of-the-art production with the tried and true materials of yesterday to produce a better version of the traditional PFM or Full Gold Crown.

### Porcelain Fused to Metal

- Designed to full contour on CAD software
- Substructure built under final design ensuring proper porcelain support
- Base and Noble alloy copings produced utilizing Selective Laser Melting (SLM) resulting in superior fit and consistent metal thickness compared to casting
- Porcelain pressed or stacked to complete esthetic restoration



### Full Cast Crowns

- Designed to final contour on CAD software
- Yellow Noble and High Noble alloys milled resulting in outstanding fit
- Sprues cut off and polished

If you still prefer the traditional restorations, try one of ours where tried and true materials are combined with cutting edge technology!



## HANSEN DENTAL LAB PARTNERS WITH D&S

On April 1 of this year, Hansen Dental Laboratory in Greenfield, Wisconsin, became a part of the D&S family. Since 1971, Hansen Dental Laboratory has been providing doctors of the greater Milwaukee area with dental restorations and services. The Mission of the laboratory, founded by Tim Hansen, has always been "Do the best for our Clients, our employees, and our families."

Hansen Dental Laboratory has an outstanding reputation for producing high quality work, and we are thrilled to have them partner with our D&S



team! Our goal is very simply to continue the tradition of quality and service that Tim Hansen started back in 1971, and their outstanding, long-time, staff of technicians will continue to do just that. At the same time, the marriage of our two labs has already enhanced and expanded upon Hansen's product offerings to meet the needs and exceed the expectations of our clients. In addition to state-of-the-art technology, affordable pricing, continuing education opportunities, and an expanded well of expertise and knowledge to draw from, Hansen is now able to offer our clients a full line-up of Removable services, the ability to receive digital impression files, and immediate access to the latest in materials and products. This includes our exclusive D-Flex™ flexible partials and ZR™ family of fixed restorations. All this means that Hansen will continue to be the best laboratory choice for area dental professionals.

"The dedicated staff at Hansen Dental Lab will continue to produce the same high quality work our clients have come to expect," said Carlos Barberena, Lab Manager at Hansen Dental Lab. "We will just have even more to offer them in terms of products and services."

Hansen Dental Lab currently offers pick-up and delivery services throughout the Milwaukee area and south to Racine. For more information on Hansen Dental Lab, including our catalog, visit [www.dnsdental.com](http://www.dnsdental.com), or email your request to [info@hansendental.com](mailto:info@hansendental.com). To schedule a pick-up of your next case, call 414-546-3040 and let Hansen exceed your expectations!



### TECHNICIAN'S TIP(S) OF THE MONTH

Do you have consistent occlusion or contact issues? If occlusion is high on every crown you get back from your laboratory, the likely culprit is the provisional. In the typical two-week period between the crown prep and seating appointment, the adjacent and prepped teeth will move if allowed to do so. If contacts look good on the solid model you get back from the lab, but are open in the mouth, those temporaries are probably a little too tight, and vice versa. Communicate with the lab on what you see by calling, emailing, or returning your report cards. Adjustments can be made in your individual doctor preferences to quantify contacts and occlusion, and over time we should be able to dial them in very closely.

Check the Dimensional Stability of your impression materials and trays. Trays that lack rigidity to hold form while being extracted from the patient's mouth or removed from the model after pouring are going to result in an increased number of fit issues. The most common culprit is the combo triple tray that has a plastic handle and a thin metal connector on the end. These trays are very easily bent, and often don't stand up to multiple pours without distorting. The same is true of the material itself. Impression materials must hold form during multiple pours without changing dimensions. If you see fit issues, talk to your lab technician to troubleshoot. Unlike other impression problems, distorted impressions are not necessarily visible, so the technicians won't know without communication. In addition, if you have a remake due to fit, make sure to return the old die along with the new impression, so that the new crown can be checked on the old die. As always, communication is key!

# LEARN ON THE LINKS AT TRAPPERS TURN GOLF CLUB

FRIDAY, AUGUST 22, 2014 • WISCONSIN DELLS, WI

Our 5th Annual Learn on the Links program again returns to beautiful Trappers Turn Golf Club in Wisconsin Dells. Last summer, we discussed the digital world that we live in, and how that affects the work flow between the office and laboratory. We also touched on the new materials available to us due to the onset of our digital environment.

This year, we will return to some of the basics as we focus on ways to enhance and optimize the indirect procedure to ensure the best possible outcome for your case through techniques, materials, trouble shooting, and impression management. An important factor for a successful indirect restoration is the quality of the final impression. Studies have shown that your choice of impression materials and clinical technique can positively impact the final restoration, office productivity, and patient comfort. This course will offer insight to the dental professional to ensure optimal outcomes for your final restoration. Areas of emphasis will include:

- I. Tissue Management
- II. Components of an Effective Impression Material
- III. Popular Impression Techniques
- IV. Provisionalization

Finally, a short demonstration of 3M ESPE's new TruDefiniton impression scanner will be provided along with an explanation of how this machine, and others like it, are quickly gaining acceptance and changing the way impressions are taken in the office.

Finish the day with an afternoon of golf at Trappers Turn Golf Club, one of Wisconsin's top golf courses, designed by Andy North. A continental breakfast and lunch will be provided.

## SCHEDULE

8:00–8:30 a.m.  
Registration and Breakfast

8:30–11:30 a.m.  
Presentation

11:30 a.m.–12:15 p.m.  
Lunch

12:30 p.m.  
Shotgun Start Golf

## LOCATION

Trappers Turn Golf Club  
2955 Wisconsin Dells Parkway  
Wisconsin Dells, WI 53965  
800-221-TURN  
www.trappersturn.com

## TUITION

Breakfast, Lunch, Seminar, and Golf included at NO COST

## CE CREDITS

3 hours

## RSVP REQUIRED

E: info@dnsdental.com • F: 608-849-7500

## REAL WORLD ENDO® PRESENTS NEW DIMENSIONS IN ENDODONTICS

### DESCRIPTION: FULL-DAY PRESENTATION (LECTURE AND HANDS-ON)

This lecture will concentrate on two areas. 1) How to incorporate new material science, such as bioceramic technology and efficient rotary instrumentation into your clinical practice, and 2) How to perform root canal therapy in such a manner that you actually enhance the long-term prognosis of the tooth. The goal of this program is to have all dentists learn how to perform endodontics in such a manner that they can offer their patients a predictable way of preserving their natural dentition in the long run.

Included in the lecture component will be a thorough discussion concerning access, non-surgical ultrasonic use, instrumentation techniques, and a new bioceramic obturation method. Particular emphasis will be placed on developing endodontic synchronicity between a machined preparation and a laser verified master bioceramic coated cone. Additionally, a new instrumentation and obturation technique (ESX® NiTi rotary instrumentation and Synchronized Hydraulic Condensation) will be introduced. All participants will have the opportunity to validate these concepts during the hands-on session.

The hands-on session provides the participants the opportunity to use "Real World" techniques and to witness first-hand, how they will change the way they practice endodontics. Time will also be dedicated to "Preventing the Separation of Rotary Files" and the use of piezo electric ultrasonics will be available at all times.

SEPTEMBER 19, 2014  
8:30 A.M.–3:45 P.M.

RADISSON PAPER VALLEY HOTEL  
333 W. COLLEGE AVENUE • APPLETON, WI 54911

CREDIT: 6 HOURS  
Lecture/Participation

### SCHEDULE:

8:30–9:00 A.M.  
*Registration*

9:00 A.M.–12:00 P.M.  
*Morning Session*

12:00–12:45 P.M.  
*Lunch*

12:45–3:45 P.M.  
*Afternoon Session*

### TUITION:

\$100 (Waived for D&S clients who send in registration with their next case)

### REGISTRATION:

Visit [www.dnsdental.com](http://www.dnsdental.com) for Registration Forms



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### CONTINUED FROM PAGE 1

the doctor. With all the e.max® units produced by D&S, the number of units that we see fracture after leaving the lab is very few. Much like porcelain fractures, they will happen occasionally due to the nature of the material. However, if you experience multiple fractures in your office, call and speak to one of our technicians to help troubleshoot. The root cause can likely be traced back to one of the issues discussed above. For single units, or small three-unit bridges in the esthetic zone, there are few options better. However, there are much better options for any posterior restorations, or any time esthetics is not the primary concern. For more information, call the laboratory, or visit [www.dnsdental.com](http://www.dnsdental.com) to find the e.max® prep guide (on the Resources page). You can also download our catalog with full information on all of the available restorative options through our website or mobile app.

## 2014 MISSION OF MERCY IN GREEN BAY

The sixth Wisconsin Mission of Mercy went was held in Green Bay on June 27 and 28. Dentists, hygienists, assistants, lab techs, and general volunteers from around Wisconsin, and some from other parts of the country, generously donated their time to make the sixth MOM hosted by the WDA Foundation another huge success.

The goal of Mission of Mercy events held around the country is to bring dental care to local residents who otherwise would be unable to receive treatment. It's safe to say this year's Wisconsin MOM again met or exceeded all expectations by providing approximately \$1.3 million in care over 1,925 patient visits.

On the lab side, the amount and quality of work done by the talented technicians who came from labs around the state was incredible. Over two days, the volunteer technicians produced 115 treatment partials (fabricated from start to finish), three repairs, two additions, and three relines. All this was accomplished by setting up a makeshift laboratory on folding tables inside the KI Center in downtown Green Bay! Two trailers full of equipment and supplies including portable flames, compressors, air lines, polishers, boil out tanks, pressure pots, lathes, and even lights for the tables were hauled up from our lab in Wauaukee and set up the day prior to the event. Dentsply Prosthetics was a strong supporter once again by donating a large number of denture teeth, and D&S provided any additional materials needed. It was our privilege to be the lead lab for the third year in a row, and it was a tremendously rewarding experience once again.

Pictured here is our Friday lab team. This group of tireless, hardworking individuals (along with a few from Saturday's crew who missed the picture), provided a lot of very happy people with rejuvenated smiles. If you don't see a technician from your lab, call them and encourage them to send someone to next year's MOM in Fond du Lac!

