

THE DENTAL ADVISORTM

Improving Patient Care Through Research & Education



Trends in Ceramics and Digital Impressioning

Ceramic materials are evolving with higher strength and increased translucency to provide improved esthetic restorations. Silica-based ceramics offer the most esthetic option, whereas zirconia ceramics provide the highest strength. Full-contour, monolithic ceramic restorations are rapidly growing in popularity, replacing ceramic-metal and layered ceramic restorations. Contributing to this revolution in ceramics is the increase in digital impressions, including both stand-alone scanners and in-office milling systems. Sixty-one percent of Clinical Consultants of THE DENTAL ADVISOR surveyed believed that digital impressions and CAD/CAM will replace traditional impressions in the future.

This issue of THE DENTAL ADVISOR discusses criteria for ceramic selection and describes the current status of digital impressions and zirconia restorations. Intra-oral scanners (*CEREC AC*, *E4D Dentist*, *Lava Chairside Oral Scanner C.O.S.*, *iTero*) are compared. Materials available for chairside milling and for full-contour zirconia restorations are discussed.

May 2012

Vol. 29, No. 4

MAIN TOPIC

Trends in Ceramics
and Digital Impressioning..... 2

CLINICAL EVALUATIONS

F-Splint-Aid Slim
(Fiber Reinforcement Strip) 8
Luxatemp Ultra
(Provisional Material) 10
Elara 11
(Autoclave)..... 11
EQUIA
(Glass Ionomer Restorative System) 12
Snap-On Smile®
(Restorative Appliance) 14

EDITORS' CHOICE

iBOND Total Etch
(5th-generation Bonding Agent)..... 8
iBOND Self Etch
(7th-generation Bonding Agent) 9
Identafi®
(Oral Cancer Screening Device) 13
FlashTips™
(Disposable Air/Water Syringe Tips)..... 15
NeoDrys
(Flexible Absorbent Pads) 16



www.dentaladvisor.com

RATINGS:

Excellent + + + + +
Very Good + + + +
Good + + +

SENIOR EDITORS
John W. Farah, D.D.S., Ph.D.
John M. Powers, Ph.D.

EDITOR-IN-CHIEF
Sabiha S. Bunek, D.D.S.

EDITORIAL BOARD
John A. Molinari, Ph.D.
Peter Yaman, D.D.S., M.S.
William A. Gregory, D.D.S., M.S.
Santine Anderson, D.D.S.
Julius E. Bunek, D.D.S., M.S.
Lori K. Brown, D.D.S.
Marie Fluent, D.D.S.
Brent Kolb, D.D.S.
Nizar Mansour, D.D.S.
Charles I. McLaren, D.D.S., M.S.
Kathy O’Keefe, D.D.S., M.S.
Thomas Poirier, D.D.S.
William T. Stevenson, D.D.S.
Robert J. Stevenson, D.D.S.
Gytis Udrys, D.D.S.

CONTRIBUTING AUTHORS
Sabiha S. Bunek, D.D.S.
Mary E. Yakas, B.A., CMC

EXECUTIVE TEAM
Jackie Farah, M.A.Ed.
Heidi L. Graber
Tricia G. Hurtt
Jennifer N. Ireland, C.D.A, R.D.A., B.S.
Jennifer Kalasz
John A. Molinari, Ph.D.
Peri D. Nelson
Courtney Richardson, B.F.A.
Christopher Voigtman
Nelson Williams, M.S.
Mary E. Yakas, B.A., CMC
Ron Yapp, M.S.

PUBLISHER
Dental Consultants, Inc.

Please send inquiries and address changes to:
THE DENTAL ADVISOR,
3110 West Liberty, Ann Arbor, MI 48103
Call: 800.347.1330 - 734.665.2020
Fax: 734.665.1648
Email: info@dentaladvisor.com
Website: www.dentaladvisor.com

No unauthorized duplication or reprints may be made. Inquiries concerning duplication may be directed to the publisher. Copyright ©2012, Dental Consultants, Inc. All rights reserved. Printed in the U.S.A. (ISSN 0748-4666) by Print-Tech, Inc.

This publication is printed on paper that is 50% recycled and has 25% post-consumer content.

From the Desk of
Dr. Bunek, Editor-in-Chief



As I sat writing this issue, I considered all the changes happening in the world of the esthetic dentist. Every day, we are faced with clinical situations in which patients want a beautiful smile that looks natural and can be accomplished quickly and painlessly. Here at THE DENTAL ADVISOR, we are excited about reporting on all of the newest trends in ceramics as well as the field of digital dentistry. For the past 4 years, we have devoted our time and efforts in learning about the ever changing world of digital impressions, mills, scanners, zirconia, and monolithic restorations. Currently we are actively using all of the digital impression systems on the market in daily practice, and have been placing and tracking all-ceramic restorations in vivo for close to 30 years. I invite anyone reading to contact us with any questions, or visit us in Ann Arbor.

Trends in Ceramics and Digital Impressioning

As materials evolve, there is a continual push toward a strong yet esthetic restoration. Silica-based ceramics offer the most esthetic option, where zirconia provides the highest strength. Some companies (*3M ESPE, Ivoclar Vivadent*) have married a zirconia coping with a ceramic overlay, producing a strong core with an esthetic overlay. It is clear that the dental industry is moving toward a more monolithic restoration. As such, newer full-contour zirconia crowns and bridges are being manufactured, offering higher translucency and combined with high strength. While *IPS e.max* continues to dominate the all-ceramic market for posterior crowns, full-contour zirconia restorations are growing in popularity due to lower cost, higher strength, and minimal preparation.

Ceramic Choices:

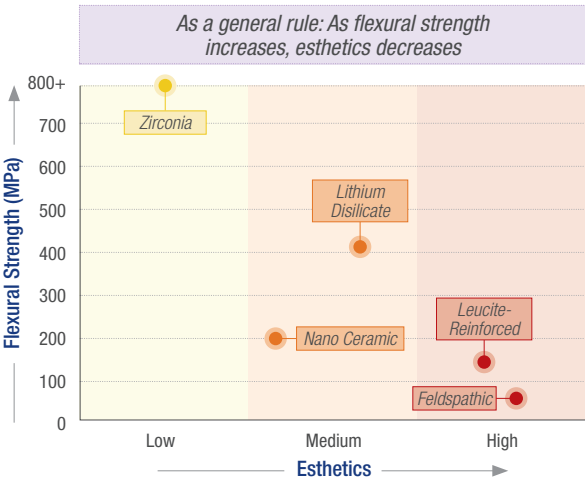
Feldspathic: Highly translucent and esthetic ceramic used most commonly for veneers. Lowest strength ceramic, ranging from 70-110 MPa.

Leucite-Reinforced (*IPS Empress Esthetic, Cerpress SL*): Excellent esthetics and translucency. The addition of leucite crystals to the glass matrix slightly improves mechanical properties. Ideal for veneers, inlays/onlays, and anterior crowns.

Lithium Disilicate (*IPS e.max*): Composed of a glass matrix filled with 70% lithium disilicate crystals, resulting in a material that is relatively translucent and 2-3 times stronger than leucite-reinforced ceramics. It is a universal material that combines strength and esthetics and can be used for veneers, inlays/onlays, and anterior and posterior crowns.

Zirconia (*Lava, Crystal, BruxZir*): Highest strength ceramic with highest fracture toughness due to the composition of polycrystals. The lack of a glass component within the matrix results in an opaque restoration, compromising esthetics in some cases. Its use is indicated for anterior and posterior crowns, 3-6 unit bridges, Maryland bridges, and implant abutments. Newer zirconias have improved translucency.

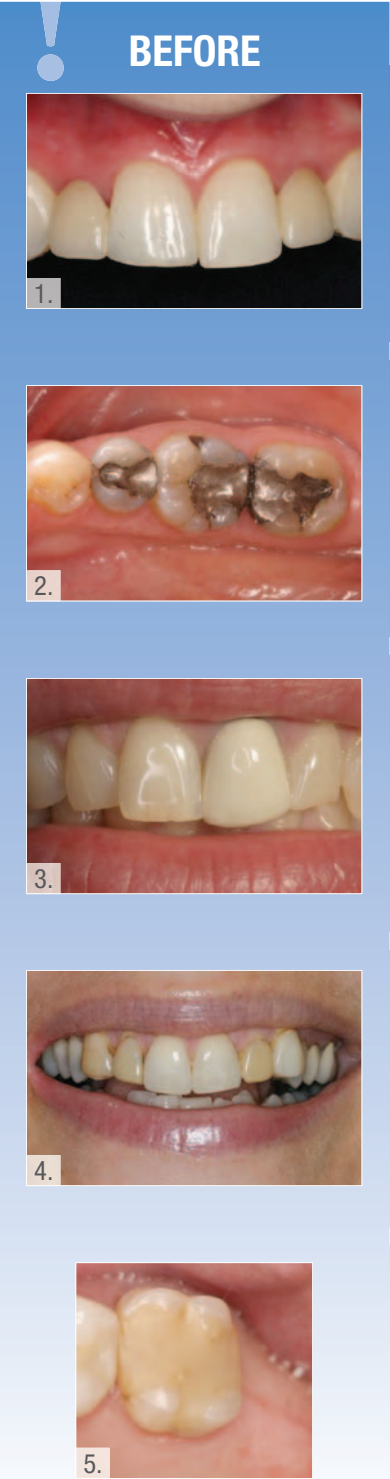
Resin Nano-Ceramic (*Lava Ultimate*): Newest class of CAD/CAM materials. The ceramic block is infused with resin resulting in a material that is easy to mill, requires no firing, can be easily repaired and adjusted, and does not wear the opposing dentition.



All Ceramic Selection: How to Choose What to Use

Ceramic selection is a critical component for clinical success. The cases below were submitted by Editors of THE DENTAL ADVISOR showcasing solutions to clinical challenges met in daily practice. While these were personal decisions of the clinicians, there are certain factors to assess when selecting ceramics. Some factors include location of the restoration, restoration type, bonding vs. cementing, retention, and the desired balance between esthetics and strength.

Thank you to Dr. Michael Koczarski (cases 1 and 2), and Dr. Lori Brown (cases 4 and 5) for sharing their expertise.



Problems & Solutions	
Clinical Situation: Patient is congenitally missing #7 and #10 and the current Maryland bridges are failing. The patient does not want orthodontic treatment. Implants are not an option as the root proximity is too close. Solution: The best option for an all-ceramic bridge in any anterior or posterior span length is porcelain-fused-to-zirconia which provides strength as well as a metal-free, esthetic restoration.	AFTER
Clinical Situation: 45-year-old male presents with failing amalgam restorations and recurrent decay. All cusps on #18 and #19 were undermined, and #19 had subgingival proximal decay. Solution: #18 and #19 were restored with <i>PFZ</i> (porcelain-fused-to-zirconia) crowns. Zirconia was chosen due to the depth of the margins and the inability to properly isolate margins for bonding. Tooth #20 required a bonded ceramic restoration due to undermined cusps. An <i>IPS Empress</i> onlay was used to restore the tooth.	
Clinical Situation: Patient is unhappy with the esthetics of her PFM crown on #9. Tooth had previous endo and after the crown was removed presented with a dark stump shade. Solution: To effectively mask a darker stump shade, the best options to establish esthetics are <i>IPS e.max</i> cutback and layered or a layered zirconia crown. In this case, an <i>IPS e.max</i> crown was fabricated.	
Clinical Situation: Patient has mismatched teeth after failed bonding. Patient does not wish to restore teeth 8 and 9. Solution: For optimum esthetics and translucency, <i>IPS Empress</i> was chosen for this case.	
Clinical Situation: Patient presents with recurrent decay underneath large composite restoration on tooth #14. Additionally, the patient is a clencher and there is minimal occlusal clearance. Solution: A full-contour zirconia <i>BruxZir</i> crown was chosen for this case because of the need for high strength and minimal occlusal reduction.	

The Evolution of Digital Impressioning

While digital impressioning has been around for over 25 years, starting with *CEREC* (Sirona Dental Systems), it is only in the last five years that we have seen other manufacturers get involved with this innovative technology. The competition has been great for dentists as now they have more options and can get involved at a level they feel comfortable. Dentists can choose strictly to take digital impresssions (*iTero*, *Lava COS*, *cara TRIOS*) and not part take in the design and mill stages. For those that are more hands on and prefer to fabricate their own restorations, they can design and fabricate a restoration in office for a patient (*CEREC AC*, *E4D Dentist*).

Q: I am confused about the terms digital impression, CAD/CAM, and intraoral scanner. What are the differences?

A: All scanners on the market start with a digital impression. The intraoral scanning wand that is used to record the data (digital impression) from the prepared teeth differs in the way it captures the dentition. Once the data are captured in the software, certain programs allow you to design (CAD) your restoration and send it to the lab or your in-office mill (CAM). If you do not have a milling unit in your office, the digital impression is sent to a laboratory or milling center for model or coping fabrication.

Intraoral Scanners
Stand-alone vs. In-office Mill

Why Choose a Stand-alone Intraoral Scanner?

A stand-alone intraoral scanner is ideal for clinicians who value the benefits of a digital impression and have no desire to design and fabricate a restoration chairside. With this technique, the dentist prepares a tooth/teeth and takes a digital impression/ scan of the dentition. This technique replaces the use of a traditional PVS or polyether impression. The data collected from the digital impression are stored automatically in the computer software, and the digital file is electronically sent to a dental laboratory or milling center.

One of the major benefits of utilizing a stand-alone IOS unit is that the clinican has all the same choices for materials as they would using a traditional impression (gold, pfm, all-ceramic, zirconia, etc.). They also have all the same choices as far as restoration type (veneer, inlay/onlay, crown, bridge, etc.). This is a great entry way into the world of digital impressioning.

Why Choose an Intraoral Scanner with an In-office Mill?

Complete systems (only available through *CEREC AC* and *E4D Dentist*) are ideal for clinicians who value digital impression technology but also like the control of designing and fabricating their own restorations chairside. For those that are wishing to offer same-day or next-day dentistry, this is an excellent option. Patient responses to these types of systems are great due to the quick turnaround of their indirect restoration; in most cases, no temporary is required. One limitation utilizing the chairside mill is availability of materials. Both systems are limited to milling monolithic glass ceramics, composites or nano ceramics. To overcome this, more recently, both *CEREC AC* and *E4D Dentist*, offer the clinican the option to have their restorations designed and milled offsite via CEREC Connect and E4D Skyworks.

The complete systems require a larger financial investment than the stand-alone scanners. To attract the clinicians who only want to utilize digital impressioning without milling, both companies now offer dentists an option to buy their scanner alone. This gives dentists more options financially, and more choices for materials and restorations.

VS

Comparing the Four Systems



CEREC AC (Sirona Dental Systems)
Powder: Yes (coating of the teeth being imaged)
of images: 1-3
Price: \$120,000/\$25,000 (scanner only)
Architecture: Closed (or selectively open)
Light Source: Bluecam LED
Image Stabilization: Yes
Mill Time: 5-10 minutes for MCXL mill
+ Quick mill time
+ Quick image capture
+ Crisp images, easy-to-read margins
+ Ability to send digital impressions to a CAD/CAM laboratory (via CEREC Connect *)
+ New 4.0 software update provides better design tools and a more intuitive workflow
- Powder needed
- Some desired design tools are lacking



E4D Dentist (D4D Technologies)
Powder: Not required, accent liquid available
of images: Minimum of 9
Price: \$116,000
Architecture: Closed
Light Source: Laser
Image Stabilization: Yes
Mill Time: 10-20 minutes
+ Can scan impressions
+ Rapid Scan makes imaging quicker
+ Great design tools for customizing restorations
+ Ability to fabricate both in-office restorations and send digital impressions to a CAD/CAM laboratory (via E4D Sky)
- Margins not as easy to read
- Requires at least 9 images for adequate detail



Lava Chairside Oral Scanner C.O.S. (3M ESPE)
Powder: Yes (light dusting of the teeth being imaged)
of images: Continuous video
Price: \$26,900
Architecture: Closed (selectively open)
Light Source: LED
Image Stabilization: No
Die: Stereolithography (SLA)
+ Small wand
+ Great powder dispenser
+ Can see captured data (vs missing data) in real time
+ Allows dentist to capture and simultaneously view continuous 3D video images
+ Software stitching: Ability to stop and start a scan
- Longest learning curve for all scanners
- Powder needed



iTero (Align Technology, Inc.)
Powder: No
of images: 21
Price: \$25,000
Architecture: Open
Light Source: Laser
Image Stabilization: No
Die: Precision Milled
+ No powder needed
+ Anti-fog feature built-in scanner head
+ Guided scanning literally tells you what to do
+ Keeps track of workflow
+ Integrated with Invisalign Software
+ Shortest learning curve
- Larger intraoral scanner head
- Margin detail on images not as crisp



Up & Coming!

cara TRIOS (co-developed by Heraeus and 3Shape)

Both companies will launch their scanners later this year. The hard drive will be the same but the two models will differ in software.

No powder

Light source: LED

Reversible autoclavable tip (can be used up to 25 times)

Open architecture

Continuous capture of images (3000 images/second)

Touch screen

Ergonomic gunshape intraoral scanner

Intuitive software

Evolution of Zirconia Restorations

Porcelain-fused-to-zirconia (PFZ) → Full-contour zirconia

Zirconia continues to gain popularity due to its high strength, fracture resistance, biocompatibility, longevity, and versatility. When zirconia was first introduced to the market, it was primarily used as a framework for single crowns and bridges (in place of metal). Similar to the fabrication of a PFM crown, the zirconia framework is overlaid with ceramic, providing a strong and esthetic restoration.

The success of zirconia as a strong framework, led to the development of a full-contour restoration. Full-contour zirconias are milled from solid monolithic blocks, and are therefore more resistant to chipping or fracture. They are increasing in popularity because they require minimal tooth preparation (similar to cast gold), are low cost, and can be used in multiple connected units. While the color and transluceny are improving, many clinicians are still limiting the use of full-contour zirconia restorations to the region.

Some clinicians are concerned with the abrasiveness of the opposing natural dentition, but research shows that a highly polished, full-contour zirconia restoration is less abrasive than conventional PFM crown and bridges. The use of full-contour zirconia restorations is a fairly new concept, and there is still more research that needs to be done. Future issues of THE DENTAL ADVISOR will report on the long term performance of full contour zirconia.

Q: Should I bond or cement zirconia restorations?

A: Zirconia is a not a glass ceramic; therefore, it cannot be etched using traditional methods. The retention of zirconia-based restorations depends on mechanical roughening of the surface and chemical bonding with an adhesive monomer (MDP) commonly seen in resin cements or zirconia primers (*Clearfil Ceramic Primer, Kuraray America; Monobond Plus, Ivoclar Vivadent; Z-PRIME PLUS, Bisco; and AZ Primer, Shofu Dental*). New universal bonding agents (*ALL-BOND Universal, Bisco; Scotchbond Universal, 3M ESPE*) bond to tooth structure and zirconia restorations.

Self-adhesive resin cements are the best choice for zirconia-based restorations, as long as the preparation is retentive. Bonded resin cements bond well to both tooth structure and zirconia treated with primer when increased retention is desired.

Material Options Available for Chairside CAD/CAM Restorations

Type	E4D Dentist	CEREC AC
Composite	Paradigm MZ100 (3M ESPE)	Paradigm MZ100 (3M ESPE)
Nano Ceramic	Lava Ultimate (3M ESPE)	Lava Ultimate (3M ESPE)
Feldspathic Porcelain	N/A	VITABLOCS Mark II (VIDENT), CEREC Blocs (Sirona Dental Systems)
Leucite-reinforced Glass-Ceramic	IPS Empress CAD LT, HT and MultiBlocks (Ivoclar Vivadent, Inc.)	IPS Empress CAD LT, HT and Multiblocks (Ivoclar Vivadent, Inc.), HD17 Blocks (Benco)
Lithium Disilicate	IPS e.max CAD (Ivoclar Vivadent, Inc.)	IPS e.max CAD (Ivoclar Vivadent, Inc.)

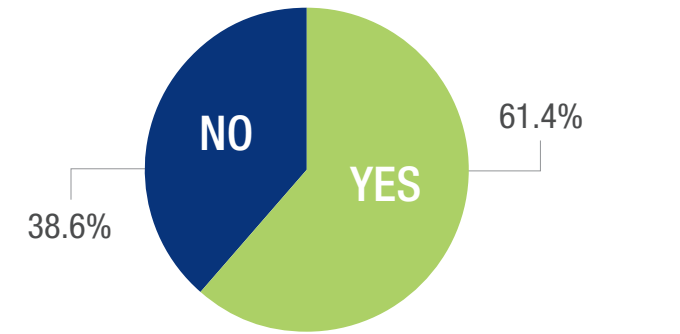
Full-contour Zirconia

Company	Full Contour Zirconia
3M ESPE	Lava Plus
DENTSPLY Ceramco	Cercon ht
DLMS	Crystal Diamond
DOCERAM	NACERA ZT
Glidewell Laboratories	BruxZir
Heany	Apex HT
Pentron Ceramics/Zahn Dental	Zirlux FC
Sagemax	NexxZr
Zirkonzahn USA Inc.	Prettau Zirconia

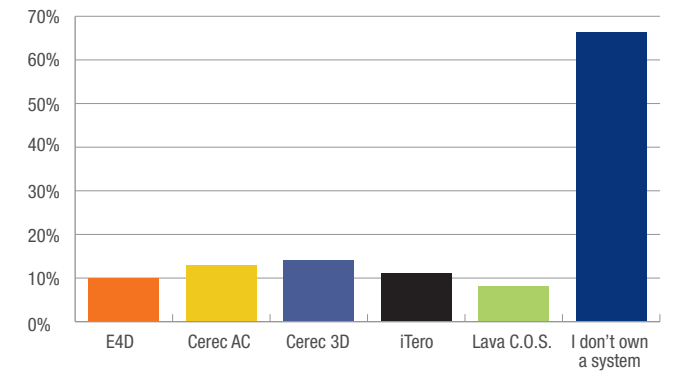
Survey of Clinical Consultants

THE DENTAL ADVISOR recently surveyed 101 clinical consultants about their experiences and perceptions of digital impressioning and CAD/CAM systems.

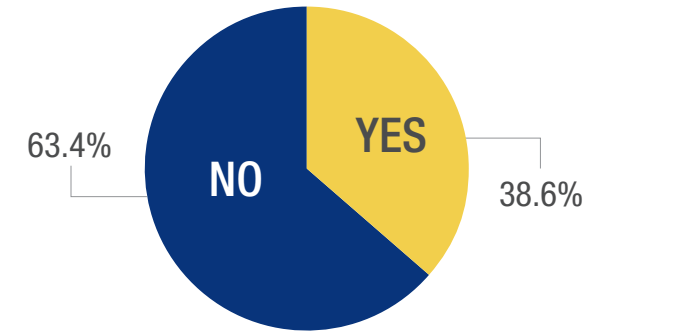
1. Do you think digital impressions and CAD/CAM will replace traditional impressions in the future?



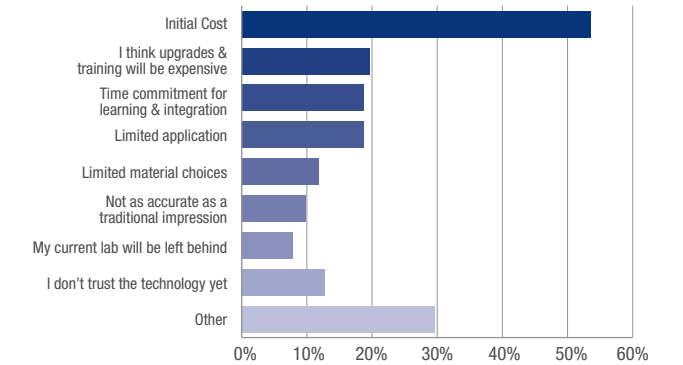
2. Do you currently own a digital impression or CAD/CAM System? If yes, which one?



3. If you do not own a CAD/CAM or digital impression system, are you planning on purchasing one?



4. If you do not own a digital impression or CAD/CAM System, what is the reason?



Cerpress SL™
+++++
American Dental Supply
(800) 558-5925
www.americandentalsupply.net



Product Description: *Cerpress SL™* is a low-fusing, leucite-reinforced ceramic system indicated for anterior and posterior crowns, inlays/onlays and veneers. Modern restorations made of *Cerpress SL™*, zirconia and lithium disilicate may be overlaid with *Sensation SL™* low-fusing porcelain and stains. *Sensation SL™* has the perfect balance of fluorescent elements which enables the restoration to duplicate natural dentition in all lighting conditions. Both contain leucite particles of 2-4 microns, dispersed in a glass matrix. *Cerpress SL™* pressable ingots are available to the laboratory in a variety of shades and translucencies, allowing the treatment of a wide range of clinical conditions.

iTero® Intra-Oral Scanner
Align Technology, Inc.
(800) 577-8767
www.itero.com



Product Description: The proven technology behind the *iTero* digital scanner takes it far beyond the latest gadget. *iTero* is a tool designed for everyday use, and one that will change the way you practice. Its efficiency saves time and money by eliminating the cost and hassle of traditional impression materials. Its flexibility offers full-function dentistry – even fixture level implants and orthodontics. And its ease of use means no powder and happier patients. There's never been a better time to incorporate *iTero* digital scanning into your practice.



iBOND Total Etch

Heraeus
(800) 431-1785 | www.heraeusdentalusa.com

Description

iBOND Total Etch is a light-cured, 5th-generation etch-and-rinse bonding agent indicated for bonding of direct composite restorations, bonding of indirect restorations in combination with light-cured luting cements, and for sealing of hypersensitive areas of teeth. It contains nanofillers in an ethanol solvent and can be applied in one coat. Light curing time is 20 seconds. **iBOND Total Etch** is available in both 4 mL bottles and single-dose delivery. The bottle kit evaluated contains one bottle of **iBOND Total Etch**, 50 applicator tips, mixing well, pictorial card, and manufacturer’s instructions. **iBOND Total Etch** was evaluated by 27 consultants in 647 uses. It received a 94% clinical rating.

Suggested Retail Cost	
iBOND® Total Etch Bottle Value Pack (3 x 4ml)	\$374.89
iBOND®Total Etch Single Dose Value Pack (100 Single Dose, 100 Application tips)	\$366.81

Product Features

iBOND Total Etch is easy to dispense in single, well-controlled drops from the 4 mL bottle. Consultants commented on the good wettability of tooth surfaces and low film thickness. They liked the one-coat application and low level of odor. Consultants suggested that etchant be provided for a more complete kit. Thirty percent of consultants reported that **iBOND Total Etch** was better than their current bonding agent and 59% reported it was equivalent. Seventy-eight percent would switch to **iBOND Total Etch** and 96% would recommend it.



Consultants’ Comments
“Good surface wettability – only one application needed.”
“No need to refrigerate.”
“No post-operative sensitivity.”
“The green bottle of iBOND Total Etch is easy to differentiate from the self-etch version in a red bottle.”
“Curing time is too long.”
“Provide the etchant in the kit.”

Clinical Tips

- Rub it into tooth surface and look for a glossy surface.
- Apply with smallest possible tip into the line angles and blow away excess.
- Material evaporates quickly; re-dispense bonding agent for multiple restorations. ■

**Kits containing iBOND 35% Gel Etchant are also available.*

F-Splint-Aid Slim

Polydentia SA
+41.91.946.2948 | www.polydentia.com

Description

F-Splint-Aid Slim is a new, narrow version of the original **F-Splint-Aid** fiberglass ribbon. **F-Splint-Aid Slim** has a 2 mm width, compared to the 4 mm original. The ribbon is made of multiple layers of fiberglass and is pre-impregnated with bonding agent. **F-Splint-Aid Slim** is indicated for splinting loose or avulsed teeth, periodontally involved teeth or temporary pontics. No special scissors are needed to cut **F-Splint-Aid Slim** to desired length. Plastic clips, provided with kit, stabilize the splint during placement. The kit contains 12 cm of **F-Splint-Aid Slim** in a bottle of bonding agent plus 5 application clips. **F-Splint-Aid Slim** was used by nineteen consultants in 75 uses. It received a 92% clinical rating.

Suggested Retail Cost	\$114.49 /Kit
-----------------------	---------------

Consultants’ Comments
“The pre-wet fiber saves a step.”
“A good product to keep in the office.”
“The clips are brilliant for holding the fiber on the teeth during bonding.”
“No refrigeration necessary and a five-year shelf life.”
“I cannot see how much ribbon is remaining in the bottle.”

iBOND Self Etch

Heraeus
(800) 431-1785 | www.heraeusdentalusa.com

Description

iBOND Self Etch is a light-curing, self-etching, one-component bonding agent (7th-generation) for use in combination with adhesive restorations. Separate conditioning (etching) of the enamel and dentin is not required; however, use of an additional etching gel on the enamel before application of **iBOND Self Etch** will not have a negative influence on the bond strength. **iBOND Self Etch** is indicated for bonding of direct light-cured composite restorations, indirect restorations (porcelain and composite inlays, onlays, veneer, crowns) in combination with a light-curing luting cement, and for sealing hypersensitive areas of teeth. Light curing time is 20 seconds. No refrigeration is required after the product is opened for first use. **iBOND Self Etch** is available in both 4-mL bottles and single-dose delivery. The bottle assortment kit contains one 4-mL bottle of **iBOND Self Etch**, 50 application tips, mixing well, pictorial card, and manufacturer’s instructions. **iBOND Self Etch** bottle kit was evaluated by 26 consultants in 648 uses. It received a 96% clinical rating.

Suggested Retail Cost	
iBOND® Self Etch Bottle Value Pack (3 x 4ml)	\$374.89
iBOND® Self Etch Single Dose Value Pack (100 Single Dose, 100 Application tips)	\$366.81

Product Features

Consultants reported that **iBOND Self Etch** was easy to dispense from the plastic bottle and apply to the tooth. The clinical procedure is easy to follow with a minimal number of steps. Most consultants commented that the 20-second curing time is too long for a bonding agent. The viscosity of the adhesive allows complete coating of tooth surfaces without running or pooling, with a low film thickness after air drying. Some consultants and



Consultants’ Comments
“Easy to dispense and use.”
“Viscosity was great – low film thickness.”
“The red bottle distinguishes iBOND Self Etch from the total-etch version in a green bottle.”
“Material comes out of bottle quickly.”
“There was a slight odor.”

patients noticed a slight odor from the acetone component of the adhesive. Thirty-five percent of consultants reported that the **iBOND Self Etch** was better than their current bonding agent and 62% reported it was equivalent. Eighty-one percent would switch to **iBOND Self Etch** and 96% would recommend it.

Clinical Tip

- Make sure to scrub the material on the enamel. ■

Clinical Tips

- Use very sharp scissors to avoid fraying.
- **F-Splint-Aid Slim** is sensitive to ambient light. Work quickly to avoid premature setting.
- Etch the teeth before applying **F-Splint-Aid Slim**. ■

Product Features

F-Splint-Aid Slim is supplied in a dispenser bottle for easy handling. The ribbon feeds through a slot in the top, and the desired amount can easily be cut off. While the ribbon cuts cleanly, subsequent closure of the bottle can crush the end of the fibers, causing fraying. The narrow width of **F-Splint-Aid Slim** was useful in cases where the 4 mm ribbon was too wide. The inclusion of bonding agent on the fibers was the consultants’ most appreciated feature. It eliminated a step and contributed to the adaptability of the ribbon to the teeth. The application clips were helpful for multi-unit splinting, and the clear plastic allows complete light curing of the underlying materials. Sixty-eight percent of consultants reported that **F-Splint-Aid Slim** was better than their current splinting system, and 21% reported it was equivalent. Seventy-nine percent would switch to **F-Splint-Aid Slim** and 90% would recommend it.

++++ 1/2



+++ 1/2

THE DENTAL ADVISOR. | 11

EQUIA

GC America, Inc.
(800) 323-7063, (708) 597-0900 | www.gcamerica.com

Description

The **EQUIA** restorative system consists of a glass ionomer filling material, **EQUIA Fil**, plus a resin coating, **EQUIA Coat**. **EQUIA Fil** is a self-curing material that releases fluoride and is recommended for Class I restorations, non-stress bearing Class II restorations, stress bearing Class II restorations when the isthmus is less than half of the intercuspal distance, intermediate restorations, Class V and root surface restorations, core buildups and as an amalgam alternative. **EQUIA Coat** is used to seal and protect the surface and margins of **EQUIA Fil** restorations. GC CAVITY CONDITIONER can be applied to remove the smear layer and condition dentin and enamel, enhancing the bond between the glass ionomer and tooth structure without concern of post-operative sensitivity. After mixing the contents of the capsule, working time is about one minute 15 seconds. After placement, the material must remain dry for at least 2.5 minutes. **EQUIA Coat** may be applied during setting of **EQUIA Fil** or after finishing. Light curing time is 20 seconds for the resin coating. **EQUIA Fil** is available in shades A1, A2, A3, A3.5, B1, B2, B3 and C4. The **EQUIA** Starter Kit contains a 50-count box of **EQUIA Fil** capsules, 4 mL bottle of **EQUIA Coat** with dispensing dishes and applicators, 5.7 mL bottle of GC CAVITY CONDITIONER, GC Fuji CAPSULE APPLIER, and manufacturer’s instructions. **EQUIA** was evaluated by 30 consultants in 556 uses. This product received a 91% clinical rating.

Suggested Retail Cost	
EQUIA Introductory Package <i>Contains: 1 EQUIA Coat, 1 EQUIA Fil 50-capsule refill and 1 GC CAVITY CONDITIONER</i> <i>Shades Available: A1, A2, A3, A3.5, B1, B2, B3, C4 and Assorted</i>	\$259.25
EQUIA Starter Package <i>Contains: 1 EQUIA Coat, 1 EQUIA Fil 50-capsule refill, 1 GC CAVITY CONDITIONER, 1 GC Fuji CAPSULE APPLIER</i> <i>Shades Available: A2 and Assorted (10 ea. A2, A3, A3.5, B1 & B3)</i>	\$300.50

+++ + ½

Consultants’ Comments

- “Material was simple to apply and set quickly.”
- “I like the fluoride release and radiopacity.”
- “Bulk fill is good for buildups where light curing may not be effective.”
- “Good for areas with difficult moisture control.”
- “Dispensing tip was too short for maxillary posterior teeth and non-adjustable.”

Product Features

EQUIA combines the benefits of a fluoride-releasing, bulk-fill glass ionomer with a resin coating that provides protection from moisture and surface wear. Most consultants reported that mixing and handling of **EQUIA Fil** were easy and that the setting time was quick enough for most clinical situations. **EQUIA Fil** has enough body to avoid slumping during setting, and it is not sticky during manipulation. **EQUIA Coat** applies smoothly with a bristle brush and provides a glossy surface that enhances the esthetics of the restoration. Ten percent of consultants reported that **EQUIA** was better than their current posterior restorative material and 37% reported that it was equivalent. Thirty-three percent would switch to **EQUIA** and 63% would recommend it.

Clinical Tips

- Mix **EQUIA Fil** in a capsule mixer for 10 seconds at 4000 rpm.
- Use a small sable brush to place **EQUIA Coat**.
- Use for core buildups and as a base for larger fillings. ■

Identafi®

DentalEZ® Group/StarDental®
(866) 383-4636, (717) 291-1161 | www.Identafi.net

Description

Identafi® is an oral examination light used as an adjunct in detecting soft tissue lesions including precancerous and cancerous lesions. The hand-held unit is battery operated and produces light in three spectral wavelengths.

1. White Light illuminates the tissue for conventional examination.
2. Violet Light (405 nm) enhances the fluorescence of normal tissue; tissue with loss of fluorescence should be examined further.
3. Green-Amber Light is a narrow band reflectance that can help differentiate between normal and abnormal vasculature.

Identafi® is intended to enhance the visualization of oral mucosal abnormalities, such as oral cancer or dysplasia that may not be apparent to the naked eye. It can also be used by a surgeon to aid in determining the appropriate margin for surgical excision. The complete unit includes the **Identafi**® unit, batteries, 100 disposable mirrors and special filtered clinician eyewear. **Identafi**® was used by seven consultants in 90 uses. It received an 87% clinical rating.

Suggested Retail Cost	
QI promo	\$2,795.00
Complete Unit	\$3,795.00

Product Features

Identafi® is a small, compact light that has the familiar feel of a dental instrument, which encourages its use and makes it more likely to be integrated into the exam routine. In cases where a lesion was apparent with the un-aided eye, **Identafi**® was rated very good for enhancing its visualization. The ability of **Identafi**® to increase the visibility of indistinct or occult lesions varied among users. During the evaluation period, some users did not find any lesions, while others did. The use of an oral cancer screening aid such as **Identafi**® engages the patient in the process and can increase awareness. The light itself is simple to use and functioned trouble-free. Fifty-seven percent of consultants reported that **Identafi**® was better than their current oral cancer screening method. Fifty-seven percent of consultants would switch to and recommend **Identafi**®.

++++



Consultants’ Comments

- “**Identafi**® made my patients very aware of my intraoral examination.”
- “The small size is great. It is very easy to use.”
- “Definitely helped evaluate distinct lesions.”
- “No messy and bad tasting dyes or solutions needed.”
- “The mirror often was not necessary.”
- “There is a delay when turning the light on.”
- “I would prefer more intensity to the violet light.”
- “Make the eyewear compatible with loupes.”
- “Buttons to switch light are cumbersome.”

Clinical Tip

- Turn room and operator lights off - darken the room to maximize visualization with **Identafi**®. ■

Improving Patient Care Through Research and Education Since 1984



About THE DENTAL ADVISOR

We are a science-based company with expertise in *publishing, clinical and laboratory evaluation of dental products and equipment, and continuing education and training*. Our evaluations can occur at the R&D, pre-market and post-market phases of product development. We publish THE DENTAL ADVISOR, THE DENTAL ADVISOR Online, THE DENTAL ADVISOR Research Reports, THE DENTAL ADVISOR Clinical Case Reports, THE DENTAL ADVISOR Clinician Technique Guides, and THE DENTAL ADVISOR Translating the Science.

Our mission is to provide the dental profession with evidence-based and clinically relevant information on dental restorative products, infection control products and dental equipment. THE DENTAL ADVISOR and THE DENTAL ADVISOR Online report objective clinical evaluations, product comparisons, comprehensive long-term clinical performance studies, and unbiased laboratory test results.

Snap-On Smile®

Den-Mat Holdings LLC
(800) 433-6628, (805) 922-8491
www.denmat.com, www.snaponsmile.com

Description

Snap-On Smile is a multi-purpose restorative appliance that requires no preparation of tooth structure, is non-invasive and is completely reversible. It is a removable appliance made of tooth-colored acetyl resin and is intended to be worn over the existing teeth. It can be designed as a full-arch or unilateral device and may be used to replace missing teeth. *Snap-On Smile* is indicated for upper and lower teeth as a short- or long-term option, for establishing vertical dimension before starting full-mouth reconstruction, as a diagnostic tool, as a provisional for implant restorations, for cosmetic enhancement of color or alignment, and as a removable partial denture. *Snap-On Smile* can be made as thin as 0.5 mm and is available in 19 shades. Laboratory fabrication of *Snap-On Smile* requires a PVS impression of the treated arch, opposing impression or model and bite registration. Photos are optional. Eight consultants had *Snap-On Smile* appliances fabricated for 29 patients. This restorative option received an 86% rating.

Dentists' Laboratory Fee	
<i>Full arch appliance</i> (six or more units)	\$499.99
<i>Partial arch appliance</i> (five or less units)	\$299.99

Clinical Observations

Manufacturer's Instructions for Doctor/Patient
Once a dentist is enrolled to become a provider of *Snap-On Smile*, online instructions, videos and support are readily accessible. The laboratory prescription provided by Den-Mat Holdings, LLC, is very thorough. Completing the lab slip ensures all of the required information is obtained while the patient is in the chair. A patient care kit is provided with the completed restoration as well as instructions for use and care. These instructions should be verbally reinforced by the dental team.

Seating/Retention of Appliance

Snap-On Smile literally snaps over the patient's teeth utilizing embrasures and undercuts for retention. In most cases, dentists did not have to make any adjustments to the appliance for proper seating. When needed, the adjustments to the internal aspect were reported to be minimal. Retention was rated very good to excellent, with the best results achieved with full-arch coverage.

Marginal Fit/Occlusion

The marginal fit of *Snap-On Smile* is good and provides an attractive transition from the resin to the gingiva. In some areas the adaptation of the material to the cervical portion of the tooth is dependent upon the tooth position. *Snap-On Smile* can be ordered with full coverage over the occlusal surfaces or with windows cut for occlusal stops. Full coverage allows for increasing vertical dimension and leveling the plane of occlusion. Because occlusal openings can decrease the strength of the appliance, most full-arch cases were completed with full coverage. Full coverage affected the patients' function and most found it difficult to eat with it in place. Occlusal adjustments were completed by consultants as needed.

Adjusting/Polishing

Snap-On Smile is easy to adjust with rotary instruments in a lab handpiece. Each doctor's introductory kit includes an assortment of acrylic burs and polishers that are effective for necessary trimming and finishing.

Esthetics/Anatomy

Options for individual tooth anatomy are limited to square or rounded incisal angles. Definition between teeth is shallow and lacks the definition possible with more permanent options. A large number of shades are available, and each restoration is limited to a monochromatic color. *Snap-On Smile* can produce esthetic results by covering misaligned, missing or discolored teeth. Ninety-three percent of patients felt it improved the appearance of their smiles.

++ ++



Consultants' Comments

"Snap-On Smile can be a good solution for temporary tooth replacement during implant procedures."

"Provides a quick way to do a major makeover."

"It opened conversations about more definitive treatment."

"Thickness can affect speech and chewing."

"Appearance can be bulky."

Patients' Comments

"Snaps right into place."

"It makes me want to show my teeth again."

"It closed my spaces and gave me an idea of what my teeth would look like with veneers."

"Hard to chew with."

"Looks larger than my real teeth."

Snap-On Smile® (continued)

Patient Satisfaction

Half of the consultants rated overall patient satisfaction as excellent, while half rated it as fair to good. Case selection was found to be critical as was management of patients' expectations.

Conclusions

Snap-On Smile was different than any other restorative solution consultants had used previously. It was considered a versatile product that was useful as a temporary restoration during implant treatment or a trial option before a more permanent treatment. Fifty percent of consultants would continue to use *Snap-On Smile* and would recommend it to a colleague. ■



FlashTips™

Sultan Healthcare
(800) 637-8582, (201) 871-1232
www.sultanhealthcare.com

Description

FlashTips™ are disposable air/water syringe tips that are designed to help prevent cross contamination. They are changed easily and quickly between patients and do not require any converters on most common syringes. *FlashTips*™ feature a locking indicator and wide locking groove to ensure tip is in place, and separate air and water chambers to minimize crossover. *FlashTips*™ are available in five colors (blue, purple, pink, orange and green) and are sold in both 250- and 1200-count packages in assorted colors. *FlashTips*™ were evaluated by 37 consultants in 3504 uses. They received a 92% clinical rating.

Suggested Retail Cost	\$55.00/250 tips \$240.00/1200 tips
-----------------------	---------------------------------------

Product Features

FlashTips™ are designed to provide effective separation of air and water without contamination. Consultants frequently commented they were pleased with this important feature. The long, narrow tips did not obstruct visibility in the mouth. While not as rigid as metal tips for retraction, most consultants found them to be adequate. The main concern noted was that the end of the tip should be more rounded to prevent soft tissue injury. Forty-two percent of consultants who used disposable tips reported that *FlashTips*™ were better than their current air/water syringe tips and 47% reported that they were equivalent. Forty-two percent of consultants who used metal tips reported that *FlashTips*™ were better than their current air/water syringe tips and 33% reported that they were equivalent. Sixty percent would switch to *FlashTips*™ and 81% would recommend them.

++ ++ 1/2



Consultants' Comments

"Easy to use and disposable."

"Great separation of air and water – air had no water contamination."

"An improvement over other disposables I have used in the past."

"These tips have the dual chambers for the air and water and do not require a converter for our A-dec/W&H equipment – good value."

"Tips are flexible- made cheek retraction somewhat difficult."

Clinical Tips

- Push them on securely.
- Check the end of the tip upon removal to ensure nothing broke off inside the syringe. ■

NeoDrys

Microcopy

(800) 235-1863 | www.neodiamond.com

Description

NeoDrys are flexible, absorbent pads that are designed to provide a dry field, cheek retraction and protection. They feature Comfort Edge® which is designed to maximize patient comfort while a soft, poly netting fabric adheres gently to tissue. A **NeoDrys** inner core of acrylic polymer traps moisture quickly and provides up to 15 minutes of parotid control. A layer of poly stiffener provides a cut-proof barrier. They are available in small (yellow) or large (blue) sizes with either the ReFlective, light-enhancing surface or the original, white surface. There are 50 pads per dispenser package. **NeoDrys** were evaluated by 33 consultants in 1387 uses. This product received a 96% clinical rating.

Suggested Retail Cost

\$12.25 and \$13.25 /50-count package

Product Features

NeoDrys are ideal for numerous procedures, including composites, sealants and orthodontics. **NeoDrys** are easy to use, comfortable for the patient due to paper thin edges, and effective in absorbing moisture. While **NeoDrys** are less stiff than cotton absorbent angles, they stay in place better and last longer. The inner cellulose layer swells as moisture is absorbed, and in some cases the seam opened, releasing the beads into the mouth. When **NeoDrys** become saturated, they are easy to remove. If it is still absorptive, it will be adhered to the buccal mucosa and should be wet with water for removal to avoid irritating the mucosa. They stay in place and provide effective protection of the buccal mucosa. Many consultants liked the reflective backing, as it provided enhanced illumination. Seventy percent of consultants reported that **NeoDrys** were better than their current absorbent pads and 18% reported they were equivalent. Seventy-six percent would switch to **NeoDrys** and 82% would recommend them.

++ ++ ++ ++ ++



Consultants' Comments

"The pads are easy to place and remove, absorb moisture well and protect tissues well."

"Great product! We are switching."

"Effective absorption – pads do not stick to tissue."

"I preferred the reflective backing - any additional light helps in the posterior."

"The non-reflective NeoDrys are useful for isolation during digital impressions."

"Great aid during bleaching procedures."

"Some patients have complained that the corners feel sharp."

"I would like an oblong shape to use instead of cotton rolls."

Clinical Tips

- Be sure to wet **NeoDrys** thoroughly before removal.
- Flex the corners to soften them before placement. ■

SPECIAL THANKS TO:

Senior Clinical Consultants:

E. Alpert, CT · R. Anthony, OH · K. Baker, TX · F. Berman, PA · R. Ciccone, MI · P. Esmond, NY · M. Evans, TN · R. Fisher, OH · G. Franco, NY · P. Grandsire, NY · K. Hamlett, TX · G. Hart, OH · R. Kaprielian, NJ · E. Katkow, MD · L. Katkow, MD · C. Kehr, MI · E. Maitland, NJ · E. Mosso, PA · G. Mosso, PA · D. Peterson, MD · V. Plaisted, NY · T. Poirier, MI · W. Powell, TX · G. Poy, MI · G. Sayre, TX · K. Schwartz, FL · B. Shumaker, NJ · B. Sims, NY · A.M. Thompson, NY · R. Trushkowsky, NY · S. Ura, NH · L. Wee, MI · P. Yaman, MI

Clinical Consultants:

M. Aksu, MI · A. Albright, NY · J. Amara, CT · S. Anderson, MI · R. Averbach, CO · B. Barricklow, OH · S. Barth, MI · L. Bartoszewicz, MI · J. Bechtel, MI · L. Bishop, MI · T. Bizga, OH · J. Bostic, OH · L. Brimhall, MT · M. Briskin, NY · C. Brown, LA · L. Brown, MI · W. Brownscombe, MI · J. Bunek, MI · S. Bunek, MI · J. Bush, PA · H. Cadorette, MI · P. Campo, NY · D. Chacko, TN · D. Chenevert, MI · R. Cherry, FL · S. Church, MI · W. Co, MI · C. Colbert, MI · M. Connelly, MI · M. Conrad, PA · S. Dillingham, NY · J. Dingman, WI · R. Dost, VA · J. Doueck, NY · A. Dutko, MI · M. Dwoskin, MI · M. Eannaccone, NY · M. Eiford, MI · R. Engle, IL · O. Erdt, MI · F. Facchini, MI · K. Fairbanks, MI · M. Feinberg, NY · L. Feldman, NJ · K. Fischer, IN · M. Fluent, MI · M. Frankman, SD · N. Garlisi, OH · L. Gee, OK · C. Goldin, MI · K. Goodman, MI · S. Graber, IL · B. Greenwood, UT · W. Gregory, MI · P. Gronet, GA · H. Gulati, MA · B. Gursky, MI · E. Gutman, NY · D. Haas, Canada · H. Hamerink, MI · S. Harden, GA · B. Herrmann, CA · R. Herwig, KS · P. Indianer, MI · J. Ireland, MI · C. Jaghab, MI · A. Jaquary, MI · J. Kaminski, MI · D. Kapp, NY · J. Karam, MI · M. Kastner, OH · E. Kelly, GA · D. Keren, NY · M. Koczarski, WA · R. Koepke, OH · B. Kolb, MI · M. La Marche, WA · C. Latham, OH · R. Le, NC · J. Leitner, MI · S. Lever, MD · I. Levine, NY · R. Lezell, MI · M. Livernois, SC · J. Lockwood, MI · E. Lowe, Canada · J. Lusby, MI · M. Man, NY · B. Manne, FL · N. Mansour, MI · K. Mantzikos, NY · F. Margolis, IL · N. Markarian, CA · M. Mason, NY · J. Mayer, OH · T. McDonald, GA · C. McLaren, MI · J. McLaren, MI · M. McMullin, MI · M. Migdal, MI · J. Mikesell, IL · R. Mizrahi, NY · G. Molinari, MI · L. Montes, NY · M. Murphy, MI · W. Nagy, TX · J. Nash, MI · A. Nazarian, MI · N. Nealis, IL · M. Nemeth, MI · C. J. Noe, MD · E. Odenweller, OH · J. Olsen, MI · R. Oshrain, NY · S. Owens, MI · M. Paquette, MI · J. Paris, TX · M. Patel, MI · T. Pieper, WY · D. Pitak, MI · S. Pomerance, MI · D. Qualliotine, NC · D. Radtke, MI · G. Raichelson, Canada · G. Ramos, NY · C. Ramsey, FL · C. Reed, MI · G. Reskakis, NY · A. Ridall, TX · J. Riggs, MI · P. Sandvick, WI · M. Shapiro, MI · J. Shea, MO · S. Shoukfeh, MI · P. Shumaker, MI · B. Silver, MI · S. Simpson, MI · B. Sims, NY · J. Smith, MI · M. Sonne, MI · R. Stevenson, MI · W. Stevenson, MI · P. Symeonides, NY · S. Tamber, MI · G. Tarantola, FL · H. Tetelman, OH · V. Thompson, MI · C. Trubschenck, CA · P. Tu, CA · G. Udry, MI · L. Vandelaar, MI · H. Vann, MS · W. Walcott, MI · M. Waranowicz, MI · R. Wilkie, MI · K. Wilson, MI · D. Wojtowicz, MI · R. Wolf, IN · W. Wright, CA · H. Yeung, CA · D. Young, MI · M. Zahn, MI · J. Zanetti, MI · P. Zanetti, MI · S. Zimmer, MI

Laboratory Consultants:

Apex Dental Milling, MI · Bullinger Dental Lab, MI · Centric Dental Laboratory, TX · Cornerstone Dental Studio, Inc., MI · David's Dental Laboratory, NY · Expertec Dental Lab, MI · Heritage Dental Laboratory, IL · Nellmar Laboratory, LLC, MI · Technique Crown and Bridge, Inc., NC