

THE DENTAL ADVISORTM

Improving Patient Care Through Research & Education



Diagnostic High Tech Equipment

Recent advances in digital diagnostic equipment are allowing dental health care professionals to provide more accurate, early diagnosis of oral pathology. The visual evidence needed to educate patients is now available through the use of intra-oral cameras, caries detectors and oral cancer screening devices. Success with this technology is largely dependent on identifying the elements most essential to the needs of an individual practice and aligning the needs with the specific capabilities of a device.

This issue of THE DENTAL ADVISOR will identify and simplify the key aspects of each type of diagnostic tool. Characteristics to consider when selecting an intra-oral camera are discussed.

March 2012

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RATINGS:

Excellent + + + + +

Very Good + + + +

Good + + +

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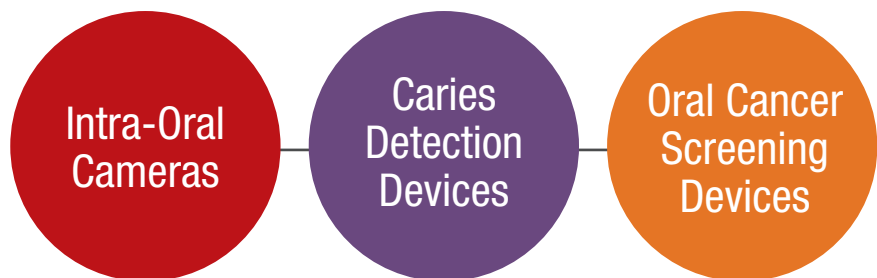
From the Desk of *Dr. Bunek, Editor in Chief*



As a practicing dentist, there are many options available as an adjunct to my current clinical armamentarium to educate patients and document hard and soft tissue conditions. I am often asked whether this equipment is necessary to practice. The easy answer is no. We have been operating in dentistry without these high-tech devices for many years. However, the question I ask myself is whether or not the equipment will assist me in becoming a better clinician and in communication.

With many of the new technologies, the answer is yes. When I can capture an intra-oral photo, show a patient chairside in color what I am trying to draw on a bracket table cover, it increases their understanding and acceptance of their condition. Showing a patient a pre-cancerous lesion as opposed to holding their tongue with a 2x2 gauze helps them understand the risk of their smoking habit. Caries detection devices help me stop watching and start doing. They can also be a great aid in communicating with children about better brushing and better food choices. Consumers are becoming more educated and seeking proof of their condition and more than ever concerned with whether or not treatment is necessary. All of these technologies are assisting clinicians in becoming more communicative with patients. The key is responsible use of these adjunctive devices to enhance diagnosis, not sell treatment.

Diagnostic High Tech Equipment



Intra-oral Cameras

Patients are becoming more inquisitive and many want to be educated about their oral health. Intra-oral cameras allow the clinician to capture high quality digital images that enhance our ability to diagnose and share information with patients. A fractured filling on a posterior tooth that is not causing pain and is not visible in an x-ray can be difficult for a patient to understand. Through the use of intra-oral cameras, we are now able to identify the problem and communicate restorative needs.

While intra-oral cameras have been available for over a decade, tremendous advances have occurred in recent years. New cameras are light-weight, ergonomic and provide excellent image quality. The following characteristics are important to consider when selecting an intra-oral camera.



Characteristics to Consider When Selecting an Intra-oral Camera

1. Light Source

Most have solid-state white LED lights (4, 6 or 8) to optimize illumination and contrast levels.

2. Focal Range

Broad focal range allows clear visualization of the area at variable distances. Some of the newer cameras can display a clear image from closeup to full face. The degree field of view is also important as it indicates how much of the tooth and surrounding structures can be included in a given image. The greater the field of view, the more information can be visualized in one image.

3. Focus

While focal range indicates how much of the structure can be included, it is the ability of the camera to focus and deliver a clear image that is ultimately most important to the patient and to the ability to diagnose. Some of the more recent cameras have an autofocus feature that continuously provides a clear image within the spectrum of its focal range.

4. Stabilization Correction

Stability of the camera while trying to view and capture an image can be very difficult. A stabilization correction features eliminates the movement that is typically seen as a blurry image.

5. Resolution

Illumination of the oral cavity and the ability of the camera to provide a clear image at a variable focal range are very important; however, it is the resolution of the camera that ultimately dictates the clarity of the image. The major technological advancement in digital imaging is the inclusion of highly advanced images sensors (CCD or CMOS sensor chips). These sensors turn light into discrete signals that are then converted to digital values. The brighter the image at a given point on the sensor, the larger the value that is read for the pixel. Resolution is impacted by pixel count, sensor size, lens quality, and organization of the pixels (filter). A CCD is referred to with an inch fraction

(1/1.8", 2/3", etc). The larger the CCD, the better the resolution. A high resolution C-MOS sensor may be identified as having 200-470 line pairs per mm with less than 2% distortion, meaning the sensor is able to efficiently convert the light into a clear digital image with minimal distortion.

6. Mobility

Many of the cameras on the market offer a USB "plug and play" option, which allows portability and easy connectivity between operatories. Software for reading camera images specific to the manufacturer of the camera is the best choice for clear images.

7. Image Capture

Most of the new camera systems are capable of capturing intra-oral and extra-oral images. The camera may capture still and full-motion video images. The actual capture of the image may be controlled by a foot pedal or button on the hand piece. Images can be frozen for patient viewing, and saved into the patient record if desired.

8. Image Management and Integration

Once the image or video is captured, clinicians have many options to integrate images into the patient record. Many of the systems integrate into 3rd-party digital dental imaging software in one of three ways:

- **Seamless:** *The digital camera automatically integrates into the existing Practice Management Software currently operated by the practice.*
- **Bridges:** *A link within your current practice management software which launches the camera software. Sometimes additional fees can occur if the bridges are not inherent in the software.*
- **TWAIN:** *This method provides a means of importing images from the camera onto the PC for visualization and storage but is the least favorable as it does not use the software tools that are inherent to the imaging device and software currently being operated.*

Caries Detection Devices

Today, patients place significant value on healthy attractive teeth. Early detection of even the smallest lesions, enables the clinician to preserve and protect tooth structure. A variety of dental imaging products have been designed to aid in the the identification of changes in the tooth structure associated with carious lesions. Significant differences exist in the mode by which these systems capture and analyze data. The following information outlines the important elements to consider when determining which type of system is best for a given practice.

	Mode of Caries Detection	Data Storage
Transillumination	A high-intensity LED white light is emitted from the probe of a small cordless handpiece, which is held to the interproximal area buccally or lingually. A mirror is used to visualize the light that passes through the tooth structure. Caries appears as a dark shadow. These devices can also be used in the detection of fractures and the identification of canal orifices during endodontic treatment.	The changes in the light passing through a carious lesion or fracture can easily be seen by the clinician and, depending on location, could be shown to the patient. Notes regarding the variation in the light pattern must be manually entered into the patient record.
Light-induced Fluorescence	These systems are comprised of either a cord or cordless handpiece with a light probe that emits fiberoptic, LED light at specific wavelengths. The light is directed into the occlusal surfaces of pits and fissures. Clean, healthy tooth structure exhibits little to no fluorescence. Carious tooth structure exhibits fluorescence proportional to the degree of caries, resulting in elevated numerical readings. Some also provide detection during the restorative phase to make sure all caries have been removed.	The numerical readings displayed by these systems can be seen by the clinician and patient during analysis. <i>Spectra</i> (Air Techniques) provides a software program which automatically records a numerical value and bridges with a patient electronic record.
CAD Analysis	This software is designed for use in analyzing the varying differences of radiographic density to identify carious lesions. The image features are analyzed and correlated with a database of known caries problems to determine the extent of the lesion. The system differentiates incipient lesions from caries that have progressed through the enamel and provides a pictorial display.	The data achieved can be visualized as a number and pictorial display on the monitor. The caries analysis software is integrated into the digital imaging software. The data are then stored in the electronic patient record.

Q: Do Caries Detection devices ever read false positives?

A: Since these devices are designed to be utilized as an adjunct to radiography and clinical examination, false positives are rare. It is important to follow manufacturer instructions to properly prepare the teeth and clear any debris that can interfere with proper readings.

Oral Cancer Screening Devices

As the incidence of oral cancer rises, we also see new advances in treatment. Successful resolution requires early detection and early intervention to provide less invasive treatment. Oral cancer screening devices are used in conjunction with the traditional intra-oral and extra-oral examination to assist in identifying abnormalities in the oral tissue, such as pre-cancerous and cancerous lesions. Systems that use LED light technology have been successful in identifying soft and hard tissue abnormalities before they are visible with ordinary light. Brush biopsy and saliva tests have also assisted in the noninvasive diagnosis of oral changes that may be pre-cancerous or cancerous. Differences, significant to selecting the system that is best for a given office are listed below.

Systems Using Light Technology

Source Wavelength: LED light technology is used in various degrees of intensity. The wavelength of emitted light is unique to each device and may use violet, blue, white or amber light to aid in the detection.

Mode of Detection: The blue or violet light is emitted into the oral cavity, which excites natural fluorescence from the surface of the epithelium through to the basement membrane (where premalignant changes typically begin) and into the stroma beneath, causing it to fluoresce. Morphologic changes are identified using reflectance. Some of the light systems require use of an oral rinse before the light is applied to the oral cavity for analysis. There are also differences in the type and brightness of the light being utilized.

Documentation: None of the systems have a means of directly importing the data into the patient record. Using a camera, the information visualized during use of the oral screening devices can be photographed. These images can then be placed into the patient record.

What's New: Oral Systemic Connection

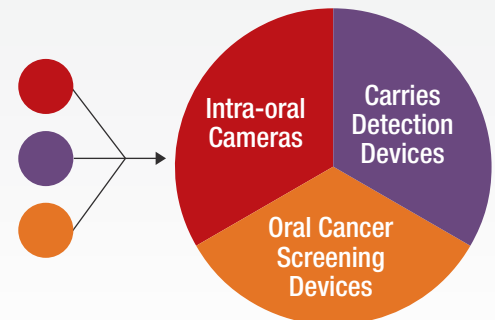
As the incidence of oral cancer rises, clinicians may be looking for simple tools to confirm or rule out tissue changes that appear abnormal. Knowing a patient's health history also provides a baseline for evaluating whether they may be at increased risk for cancerous or precancerous lesions. Two testing mechanisms are available:

1. **OraRisk® HPV (Oral DNA Labs)** is an available test for Dental Offices to easily screen for risk of Oral HPV. Oral HPV is a manifestation of the HPV virus in the mouth, and is primarily found in the oropharyngeal complex. Some strains of oral HPV are a greater risk for developing oral cancer. By collecting and analyzing the sterile saline water expectorate of a patient, a laboratory can determine if these strains are present. Analysis will give an interpretation of the salivary sample and determine the level of risk for development of HPV. A comprehensive report and recommendations for follow up testing intervals is provided for each patient.
2. **Oral CDx (CDx Diagnostics)** is a transepithelial brush biopsy and provides a non-invasive way for doctors to test the red and white spots commonly seen during an oral examination. This full-thickness biopsy collects cells from all 3 layers of the epithelium. Computer analysis of the tissue is used to rule out oral dysplasia or cancer.

Blending Functions of Diagnostic Equipment

Intra-oral cameras, caries detectors and oral cancer screening devices provide invaluable tools for early diagnosis of oral pathology. The clinician can diagnose earlier to provide minimally invasive treatment, provide educational materials to the patient and quickly determine if abnormal areas are precancerous or cancerous. Today, manufacturers have responded to the growing needs of a practice and designed equipment with multiple diagnostic functions:

- *Caries Detectors + Oral Cancer Detectors: **Microlux Diagnostic System** (AdDent)*
- *Caries Detectors + Intra-Oral Cameras: **SOPROLife** (Acteon)*



Diagnostic Equipment Products

Intra-oral Cameras						
Product	Company	Focus	Light Source	Focal Range	Capture - Handpiece or Foot Pedal	Rating
DEXcam 3	DEXIS	Manual	LED	1 mm to infinity	Handpiece, foot pedal, software	na
GXC-300	Gendex	Manual	LED	1 mm to infinity	Handpiece, software	na
Intraoral Camera	Panasonic	Auto	LED	0 to infinity	Handpiece	86%
Iris	Digital Doc	Manual	LED	1 mm to infinity	Handpiece or foot pedal	ce
Kodak 1500 Intraoral Camera	CareStream Dental, LLC	Auto	LED	1 mm to infinity	Handpiece, foot pedal, software	ce
Polaris	Air Techniques	Auto	LED	6 mm to infinity	Handpiece	92%
Sopro 617	ACTEON North America	Auto	LED	5 mm to infinity	Handpiece	na
Sopro 717 First	ACTEON North America	Auto	LED	0 to infinity	Handpiece	na
Sopro LIFE (includes caries detection)	ACTEON North America	Auto	LED	0 to infinity	Handpiece	na

Q: I want to utilize an intra-oral camera in my practice; however, I do not have computers in my operatories. Are there any simple solutions to easily educate my patients and discuss their condition?

A: *Dr. QuickLook* (*Dr. QuickLook*) is a portable, easy to use dental viewer. It has a small, 3.5" LCD color monitor that displays intra-oral images quickly. It is a simple solution to show patients each area and either freeze an image or tour the mouth as you perform an examination. The wand is attached to the handheld viewer. It does not store or keep images.



Sharing In The Cloud

Collaborative treatment planning is important and sharing findings between specialties can be accomplished easily. HIPAA compliant services are now available which allow clinicians to share case photographs, intra oral photos, digital radiographs, and oral cancer detection photos in the cloud. Many practice management software imaging programs allow you to share among offices with secure email. These same portals are being developed for insurance claims as well.

Caries Detectors

Product	Company	Mode of Detection	Cordless	Rating
 DIAGNOdent Classic	KaVo Dental Corp.	Fluorescence	No	93%
DIAGNOdent Pen	KaVo Dental Corp.	Fluorescence	Yes	na
FUSION Transilluminator	Dentlight	Transillumination	Yes	na
Logicon Caries Detector	Carestream Dental	CAD Analysis	na	na
MICROLUX Diagnostic System	AdDent	Transillumination	Yes	na
Midwest Caries I.D.	DENTSPLY Professional	Fluorescence	Yes	na
Orascope Basic	Orascope	Transillumination	Yes	na
Orascope DK	Orascope	Transillumination	Yes	na
SOPROLIFE	ACTEON North America	Fluorescence	No	na
 Spectra Caries Detection Aid	Air Techniques	Fluorescence	No	91%

Oral Cancer Screening Devices

Products Utilizing A Light Source	Company	Light Source	Mode	Rating
 Identafi	DentalEZ	LED	Fluorescence	87%
Microlux DL	AdDent	LED	Reflection	84%
VELscope	LED Dental	LED	Fluorescence	ce
Vizilite Plus	Zila	Chemiluminescent stick	Reflection	na



TDA Recommends:

- **Intraoral Camera**
(Polaris/Air Techniques)
- **Caries Detectors**
(Spectra/Air Techniques,
DIAGNOdent/KaVo)
- **Oral Cancer Screening Device**
(Identafi/StarDental)

Identafi®

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



Product 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.

3M ESPE RelyX Unicem 2 Automix Self-Adhesive Resin Cement

3M ESPE

(800) 634-2249 | www.3mespe.com

Description

3M ESPE RelyX™ Unicem 2 Automix Self-Adhesive Resin Cement is a dual-cured, self-adhesive resin cement. It is indicated for final cementation of all-ceramic, composite, or metal inlays, onlays, crowns and bridges, and posts as well as restorations cemented to implant abutments. It is not recommended for veneer cementation. **3M ESPE RelyX Unicem 2 Automix Cement** is available in automix syringes in three shades: A2 Universal, A3 Opaque, and Translucent. **3M ESPE RelyX Unicem 2 Automix Cement** is based on the same chemistry as RelyX Unicem Self-Adhesive Resin Cement (see page 2). The improved formulation offers even more convenience due to its automix delivery system. The kit includes one 8.5 g syringe (translucent, A2 Universal or A3 Opaque), 10 regular mixing tips and 5 endo mixing tips, manufacturer's instruction, and a technique card.

Unique Features

3M ESPE RelyX Unicem 2 Automix Cement is a versatile cement with easy dispensing. The dual-barrel syringe accepts short mixing tips that minimize waste and dispense the cement directly into the restoration. Angled intraoral tips or endo tips attach to the mixer for placement of cement into the prepared tooth. These tips are especially useful for cementation of inlays/onlays and posts. The shades provided are adequate for most clinical situations. Compared to the original RelyX Unicem packaged in capsules, this material is less viscous, allowing easier seating of restorations. A very brief (1-2 second) tack cure from the facial and lingual surfaces allows for easy clean-up of excess cement. Consultants appreciated the advantage offered by room temperature storage.

Clinical Evaluation Protocol

- More than 500 restorations were cemented with **RelyX Unicem 2 Automix Self-Adhesive Resin Cement** by five dentists at Enspire Dental beginning in August 2010.
- The restorations include ceramic inlays, onlays, bridges, ceramic and PFM crowns, posts, and CAD/CAM restoration (Figure 1).
- One hundred and forty-five restorations were recalled and the following categories evaluated: lack of sensitivity, marginal discoloration, and retention (debonding).
- Each category was rated on a scale of 1-5: 1=poor, 2=fair, 3=good, 4=very good, 5=excellent.

Clinical Observations

Lack of Sensitivity

To date only four patients reported slight to moderate post operative sensitivity shortly after cementation. In two cases the post-op sensitivity subsided in less than three weeks and in two patients the crowns debonded shortly after cementation (Figure 2).

Marginal Discoloration

None of the restorations recalled exhibited any marginal discoloration at one year.

Retention

Among the 500 restorations cemented, six posterior crowns (1.2%) debonded over the first 12 months (Figure 2).

1-year Clinical Performance

+++++



FIGURE 1: Type of Restorations

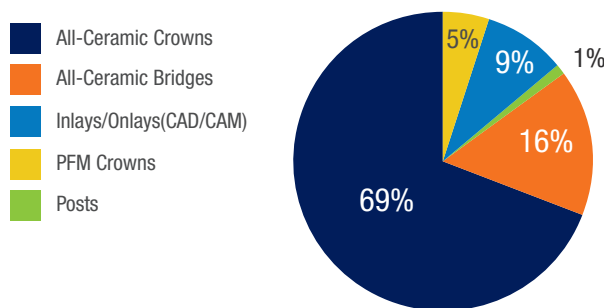
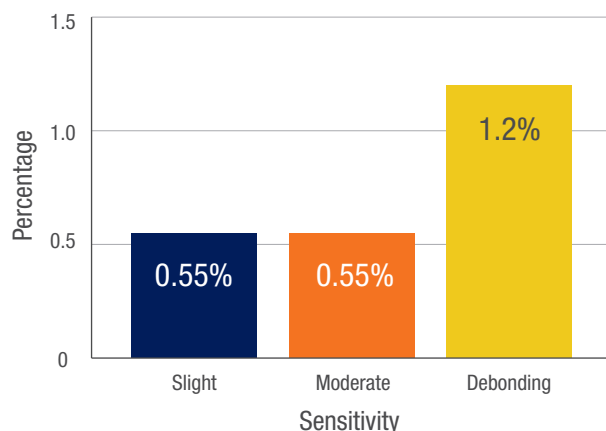


FIGURE 2: Results of 1-year Recall of 3M ESPE RelyX Unicem 2 Automix



Summary

RelyX Unicem 2 received a 98% rating at one year and has performed extremely well. ■

3M ESPE RelyX Unicem Self-Adhesive Resin Cement

8-year Clinical Performance
++ ++

3M ESPE

 (800) 634-2249 | www.3mespe.com

Description

3M ESPE RelyX™ Unicem Self-Adhesive Resin Cement is a dual-cured resin cement. It is self-adhesive, requiring no separate etching, priming, or bonding. The cement is filled 72% by weight and contains fluoride. **RelyX Unicem** is available in two capsule sizes (Aplicap and Maxicap) in shades A1, A2, A3, opaque, white opaque, and translucent. **RelyX Unicem** is indicated for the cementation of silica-based and high-strength ceramics, PFM and metal restorations, crowns, bridges, inlays, onlays, and endodontic posts as well as for restorations cemented to implant abutments. It is also recommended for cementing CAD/CAM restorations.

Clinical Evaluation Protocol

- More than 6300 restorations have been cemented with **RelyX Unicem** over the past eight years at Enspire Dental by five dentists.
- The restorations include ceramic inlays, onlays, bridges, ceramic and PFM crowns, posts, and CAD/CAM restorations.
- 1,094 restorations were available for recall. Categories evaluated at recall were marginal discoloration, debonding, and sensitivity (Figure 3).
- Five percent of marginal discoloration was slight, 2% moderate, and 1% severe. Debonding was at 2.4% over the eight-year period, while sensitivity was 1.1%.

Summary

RelyX Unicem has proven to be a reliable self-adhesive resin cement over the eight-year recall period. This product received a 98% clinical rating. ■

Consultants' Comments

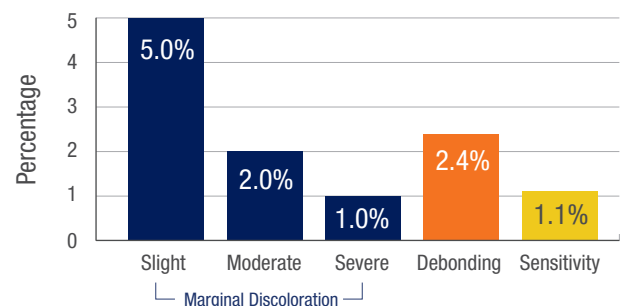
"We use RelyX Unicem more often than any other cement in the office."

"I love the narrow post cementation tips used with RelyX Unicem."

"In 8 years of using RelyX Unicem, it really has proven itself."

"I will not forget the large case I cemented with Unicem 2, much time was saved and less stress."

FIGURE 3: Results of 8-Year Recalled Restorations of RelyX Unicem



Zooby™ Fluoride Foam

++ ++

Denticator

 (800) 227-3321 | www.denticator.com

Description

Zooby Fluoride Foam is designed to have the optimal consistency to easily fill fluoride trays and enhance patient compliance. **Zooby Fluoride Foam** contains 1.23% APF and is recommended for a one- to four-minute fluoride treatment. The Zooby foam line includes six gluten-free flavors that match those of Zooby Prophylaxis Paste: Chocolate Chow™, Happy Hippo Cake™, Turtle Melon™, Growlin' Grrrape™, Gator Gum™, and Spearmint Safari™. The foam comes in 4.4-ounce aerosol cans; each can provides enough foam for 55 full-mouth treatments. **Zooby Fluoride Foam** was evaluated by 24 consultants in 526 uses. It received an 88% clinical rating.

Suggested Retail Cost

\$21.99/Can

Product Features

The flavors and scents of **Zooby Fluoride Foam** were appealing to pediatric patients. The Happy Hippo Cake was especially liked by the kids. Some consultants reported that the mint flavor was too strong. The fluoride dispenses easily, expanding into a light foam. The consistency of the foam received mixed ratings, with some finding it too runny. Thirty-three

Consultants' Comments

"Kids liked the flavors and scents."

"The foam was easy to use."

"The flavors are strong."

"Directions for time of application were not clear."

percent of consultants reported that **Zooby Fluoride Foam** was better than their current APF foam and 54% reported it was equivalent. Sixty-seven percent would switch to **Zooby Fluoride Foam** and 71% would recommend it.

Clinical Tip

- Use a small amount to prevent overfilling the trays. ■

CLEARFIL SE Protect with CLEARFIL MAJESTY Esthetic in Class V Restorations

1-year Clinical Performance



Kuraray America

(800) 879-1676 | www.kuraraydental.com

Description

CLEARFIL MAJESTY Esthetic is a universal, lightcured, nanofilled, radiopaque composite for anterior and posterior use. **CLEARFIL MAJESTY Esthetic** is available in 18 shades: A1, A2, A3, A3.5, A4, B1, B2, B3, C3, T, E1, E2, E3, OA2, OA3, OA4, BL1, and BL2. The composite can be applied in a single shade or layered for complex esthetic cases. **CLEARFIL MAJESTY Esthetic** is available in 3.6 g syringes or kits of 20, 0.26-g unit-dose tips. **CLEARFIL SE Protect** is a two-component, self-etching (6th-generation) bonding agent. This light-cured adhesive contains fluoride as well as the functional monomer MDPB which offers an antibacterial effect. **CLEARFIL SE Protect** is available in 6 mL bottles of Primer and 5 mL bottles of Bond.

Clinical Evaluation Protocol

- 232 **CLEARFIL MAJESTY Esthetic** restorations were placed in 67 patients.
- **CLEARFIL SE Protect** was used to bond all restorations.
- All restorations were placed in anterior teeth.
- 95 restorations were available for evaluation of clinical performance up to 14 months after placement (Figure 1).
- Restorations were evaluated on a 1-5 rating scale: 1 = poor, 2 = fair, 3 = good, 4 = very good, 5 = excellent (Figure 2).

Clinical Observations

Wear Resistance

No visible signs of wear were noted on any of the restorations recalled (Figure 2).

Esthetics

CLEARFIL MAJESTY Esthetic exhibited excellent blending with the surrounding enamel, producing highly esthetic restorations (Figure 2). During this first year after placement, shades and translucency were well maintained.

Resistance to Marginal Discoloration

CLEARFIL SE Protect was used to bond the **CLEARFIL MAJESTY Esthetic** restorations without the use of phosphoric acid etching of peripheral enamel. No staining at the cavosurface margins was observed (Figure 2).

Retention

All restorations were intact; no de-bonding occurred (Figure 2).

Sensitivity

No post-operative sensitivity was reported when patients were asked at their recall appointments (Figure 2).

Summary

Ninety-five **CLEARFIL MAJESTY Esthetic** restorations bonded with **CLEARFIL SE Protect** were evaluated for clinical performance during the first year after placement. All of these anterior restorations were intact upon recall and were rated excellent in all categories evaluated. The strong bond provided by **CLEARFIL SE Protect** resulted in no marginal staining and no sensitivity. **CLEARFIL MAJESTY Esthetic** with **CLEARFIL SE Protect** received a 100% clinical rating. ■

Consultants' Comments

"Great composite for all-around use."

"Blends well with the enamel."

*"With **CLEARFIL SE Protect** and **CLEARFIL MAJESTY Esthetic**, I never see a white line at the margin."*

"No post-op sensitivity."

FIGURE 1: Age of **CLEARFIL MAJESTY Esthetic Restorations at Recall**

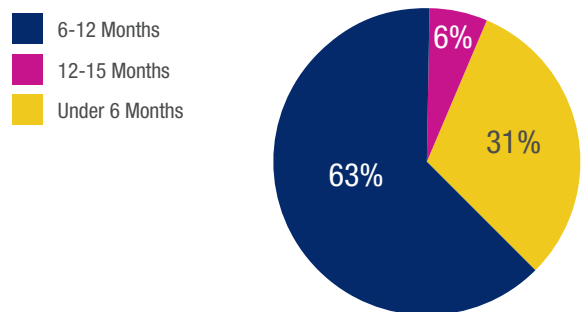


FIGURE 2: Ratings of **CLEARFIL MAJESTY Esthetic Restorations at 1-year Recall**



MI Varnish™

++ ++ 1/2



GC America Inc.

(800) 323-7063 - (708) 597-0900 | www.gcamerica.com

Description

MI Varnish is a 5% sodium fluoride varnish containing RECALDENT™ CPP-ACP. The application leaves a film of varnish on tooth surfaces and remains on teeth for approximately four hours. It is indicated for the treatment of hypersensitive teeth. **MI Varnish** is available in a 50-count box of unit-dose containers in “Fresh Strawberry” flavor with disposable brushes and patient instructions pad. **MI Varnish** was evaluated by 26 consultants, including dentists, hygienists and dental assistants, in 526 uses. It received a 91% clinical rating.

Suggested Retail Cost

\$121.50

Consultants' Comments

“Easy to apply – nice dispensing system.”

“I would switch. This varnish dries clear, there is a generous portion given and it has good workability.”

“Reduces sensitivity.”

“Sticky surface after application.”

Clinical Observations

Packaging/Manufacturer's Instructions

The unit-dose containers are easy to peel open and contain enough material for any full-mouth application. Hygienists found the containers easy to hold and liked having the brushes packaged separately. Consultants suggested providing a laminated instruction card.

Ease of Dispensing/Application/Quality of Coating

MI Varnish was smooth on application as long as the teeth were fairly dry. If the brush picked up moisture, some clumping of the varnish on the brush occurred.

Taste/Color

Some patients liked the strawberry flavor, whereas others did not care for it. Some patients reported a slight burning sensation on application. Consultants reported that the coating was clear when dry.

Reduction of Sensitivity

Consultants reported that **MI Varnish** was effective in reducing sensitivity.

Summary

Consultants used **MI Varnish** as a fluoride treatment in children and adults. Fifty percent of consultants reported that **MI Varnish** was better than their current fluoride varnish and 38% reported it was equivalent. Sixty-nine percent would switch to **MI Varnish** and 85% would recommend it.

Clinical Tips

- Teeth must be completely dry during application.
- Apply in thin layers to minimize clumping.
- Do not use on patients with milk protein allergies. ■

Ceramir Crown & Bridge

Doxa Dental Inc.

(855) 369-2872

www.doxa.se | www.ceramir.se | www.ceramirUS.com

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Description

Ceramir Crown & Bridge is a permanent, radiopaque, bioceramic luting cement supplied in capsules. It is indicated for conventional cementation of metal-, lithium disilicate-, alumina- and zirconia-based restorations. The capsules contain glass ionomer powder and bioceramic (calcium aluminate) powder plus water. Activation of the capsule with the Ceramir Activator is done prior to mixing in a 4000-5000 rpm mixer. Dispensing requires use of either the Ceramir Applicator, Aplicap Applier (3M ESPE) or the AC Applicator (VOCO). **Ceramir Crown & Bridge** is self-setting with a working time of two minutes and a setting time of four to eight minutes. The cement is designed to be biocompatible and to resist acid and acid-producing bacteria. It requires no etching, priming, bonding, or conditioning. Each box contains 20 capsules of cement and manufacturer's instructions. **Ceramir Crown & Bridge** was evaluated by 20 consultants in 314 uses. This product received a 92% clinical rating.

Suggested Retail Cost

Ceramir C&B Singlecap refill Box of 20	\$129.99
Ceramir C&B (Doublecap) refill Box of 20	\$199.99
Ceramir C&B Starter Kit Incl. Singlecap refill, Applicator, Activator	\$229.99

Clinical Observations

Packaging and Manufacturer's Instructions

Within the box, each of the 20 capsules of **Ceramir Crown & Bridge** is individually packaged in a foil pouch. Instructions are clear and concise and are accompanied by a pictorial card for quick reference. Consultants rated packaging and instructions as good.

Ease of Activating, Mixing and Dispensing

Activation of the capsule is done with an activator available from Doxa Dental. After mixing, the nozzle of the capsule must be rotated 180° before extruding the cement. Failure to rotate the tip can result in cement coming out of the seams in the capsule. Assistants noted that a homogeneous mix of cement was achieved in all cases.

Viscosity of Mixed Cement

Consultants rated the viscosity as very good. The cement is smooth and creamy and coats the surface of the restoration well. Upon seating, little to no resistance was felt by the dentists placing the restorations.

Working and Setting Times/Removal of Excess Cement

Working time was rated as good. Two size of capsules is available, Ceramir C&B singlecap and Ceramir C&B (doublecap), an additional capsules may be necessary for multiple-unit bridges. The two minutes working time is adequate even in cases of mixing more than one capsule. The cement reaches a rubbery stage after additional one to two minutes, when clean-up is recommended. Removal of excess cement at this stage is very easy. After clean-up, the restoration must be stabilized for an additional four minutes. Consultants would like the option of a faster setting time.

Esthetics of Mixed Cement

The cement is a bright white color, which facilitates visibility and clean-up at the margins. In cases of translucent zirconia restorations, shine-through of the opaque cement can occur.



Consultants' Comments

"Consistent mixes and setting times."

"Low-viscosity cement does not inhibit complete seating."

"Excess cement peels away with a light touch."

"No reports of post-operative sensitivity from patients."

"I like the reported biocompatibility of this cement."

"Mixing and dispensing are cumbersome."

"Setting time is a little longer than I am used to."

Post-insertion Sensitivity

There were no reports of post-insertion sensitivity.

Summary

Fifteen percent of consultants reported that **Ceramir Crown & Bridge** was better than their current crown and bridge cement and 60% reported that it was equivalent. Sixty percent would switch to **Ceramir Crown & Bridge** and 85% would recommend it.

Clinical Tips

- A capsule activator, mixer and applicator are required for use.
- Perform clean-up in the rubbery phase, around three minutes after mixing.
- Do not use with lower-strength glass ceramics.
- Store at room temperature. ■

XCEED® Powder-Free Nitrile Exam Gloves

Microflex Corporation

(800) 876-6866 | www.microflex.com/XCEED

Description

XCEED® Powder-Free Nitrile Exam Gloves are non-sterile, single-use, ambidextrous, non-latex gloves. They are light blue in color and feature beaded cuffs and textured fingertips. Manufactured with Avantex™, Microflex's exclusive technology, **XCEED®** gloves deliver up to 60% greater strength than other nitrile brands. Additionally, **XCEED®** gloves deliver 74% more protection against pinholes than the FDA standard for medical exam gloves. **XCEED®** is the first and only exam glove to receive an ergonomic certification. They are available in 250-count boxes of extra-small, small, medium, and large and 230 gloves per box of extra-large. **XCEED®** gloves were evaluated by 46 consultants in 2188 uses. They received a 93% clinical rating.

Suggested Retail Cost

\$21.16/Box of 250

Product Features

Most consultants reported that **XCEED® Powder-Free Nitrile Exam Gloves** were easy to don and provided good tactile sense. The gloves feel soft on the hands and flex with hand movements. Most consultants found the gloves to be stronger than many other nitrile gloves, with few reports of tearing. The fit is good, though a little narrow. Fifty percent of consultants reported that **XCEED® Powder-Free Nitrile Exam Gloves** were better than their current nitrile exam gloves and 33% reported they were equivalent. Sixty-five percent would switch to **XCEED® Powder-Free Nitrile Exam Gloves** and 85% would recommend them.

Clinical Tip

- Make sure your hands are completely dry when putting these gloves on. ■

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Consultants' Comments

"The tactile sense is better and the gloves are more flexible than my other nitrile gloves."

"I love how they feel - they fit well and have excellent tactile sense."

"They felt natural. The size was perfect."

"These are very comfortable gloves; no fatigue with longer procedures."

"The length of the glove is short in the wrist area."

"Add more grip to the fingertips."

NV Microlaser

Philips Oral Healthcare

(800) 514-3232 | www.philipsoralhealthcare.com



Description

NV Microlaser is a cordless diode laser designed to deliver laser energy in either a continuous wave or pulsed mode. The laser features an LCD screen for selecting modes, pre-set procedures, aiming beam and beeping volume. Each non-sterile, disposable fiber tip is individually wrapped and is pre-scored and pre-stripped. The unit contains a magnet, which snaps the tip into place and aligns the tip with the laser aperture. When the tip is connected, there is a visual verification indicating proper attachment. The tip can attach in six different positions allowing the user to reach difficult areas during procedures. The foot pedal is battery-powered and wireless, powered by two AA batteries. **NV Microlaser** is intended to be used for oral soft tissue surgery, including sulcular debridement of diseased fibrous tissue, gingivectomy, gingivoplasty, lesion (tumor) removal, fibroma removal, tissue retraction, aphthous ulcers, gingival hyperplasia (excision and recontour), crown lengthening, operculectomy, frenectomy, and photocoagulation. In addition, the **NV Microlaser** may be used for periodontal procedures, including laser soft tissue curettage; laser removal of diseased, infected, inflamed or necrosed soft tissue within the periodontal pocket; removal of highly inflamed edematous tissue affected by bacteria penetration of the pocket lining; and junctional epithelium. The **NV Microlaser** diode laser is directly coupled to a lens and aligned to the fiber optic inside the disposable tips, using a two-axis alignment system. Each rechargeable lithium ion battery provides 20 minutes of continuous operation at 1.2 watts of power when fully charged and eight hours of stand-by time. The battery must be fully charged before initial use. Subsequent charging takes one hour. The cradle features LED lights to indicate the amount of charge remaining. The system includes the **NV Microlaser** main body, batteries, three pairs of safety glasses, base charger (cradle), power supply, two safety keys, wireless foot pedal and 35 disposable tips. **NV Microlaser** was evaluated by nine consultants in 129 uses. It received a 96% clinical rating.



Consultants' Comments

"The unit is cordless."

"Easy to set up and use."

"The tips are disposable."

"Protective eyewear is comfortable."

"The pre-set settings are a little low in wattage."

"The LCD display is small."

"Instructions should include a troubleshooting section."

Suggested Retail Cost

\$4,995.00/Unit

Product Features

The wireless feature of **NV Microlaser** makes it portable and easy to integrate into clinical use. The entire system is lightweight and convenient to move among operatories. Set-up is simple, requiring only turning the key in the wireless foot pedal, attaching a disposable tip, and selecting the setting from the menu on the laser. Settings on the menu are arranged by procedure; wattage may be increased or decreased on any of the pre-sets. Generally the power settings are on the low end of the usable range. The batteries in the laser hold their charge for multiple uses, and consultants had no loss of power during the evaluation period. Eighty-nine percent of consultants reported that the **NV Microlaser** was better than their current diode laser. Eighty-nine percent would switch to the **NV Microlaser** and 89% would recommend it.

Clinical Tips

- Hold the tip at a 45° angle to the tooth for troughing during a crown preparation.
- For gingival troughing, use a 1.6-1.8 W setting. ■

BOND FORCE Pen

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Tokuyama Dental America Inc.

(877) 378-3548 | www.tokuyama-us.com

Description

The **BOND FORCE Pen** is a new delivery system containing classic Bond Force adhesive, a 7th-generation, single-component, self-etching, light-cured, fluoride-releasing bonding agent. It is indicated for bonding of light- or dual-cured resin composite to cut/uncut enamel or dentin and fractured porcelain/composite for repair. **BOND FORCE Pen** features click-button dispensing and has an indicator to monitor the remaining amount of adhesive in the pen. The kit contains a 2 mL **BOND FORCE Pen**, dispensing well, 25 disposable applicator brushes, and manufacturer's instructions. **BOND FORCE Pen** was evaluated by 14 consultants in 380 uses.

Suggested Retail Cost

<i>Bond Force Pen Intro-Kit</i>	\$69.00
<i>Bond Force Pen Twin Pack Refill</i>	\$125.00

Editors' Observations

Manufacturer's Instructions/Packaging

Instructions and packaging were rated good to excellent.

Ease of Dispensing/Convenience of Pen

BOND FORCE Pen is simple and easy to use. 2-3 clicks are required to initiate flow of the material. Consultants believed that this dispensing system with its small drops reduces waste of bonding agent. **BOND FORCE Pen** is an alternative to bottle dispensing. It is not intended for intraoral placement; rather, it is used to dispense the liquid into a well. Consultants suggested that intraoral tips be provided for direct placement onto the tooth.

Volume Indicator

The volume indicator window is helpful, allowing you to see the quantity of material remaining.

Viscosity/Surface Wetting

Most consultants liked the viscosity and wettability of the bonding agent on the tooth. Consultants reported that margins were not visible.

Lack of Postoperative Sensitivity

Consultants rated lack of postoperative sensitivity as very good to excellent.

Summary

BOND FORCE Pen is a click-button dispenser for **BOND FORCE**. Thirty-six percent of consultants reported that the **BOND FORCE Pen** was better than their current dispensing system for bonding agents and 43% reported it was equivalent. Fifty-seven percent would switch to the **BOND FORCE Pen** and 64% would recommend it. **BOND FORCE Pen** received a 92% clinical rating.

Clinical Tips

- Click 2-3 times to dispense material.
- Keep the pen upright when dispensing.
- Refrigeration is required. ■



Consultants' Comments

"I am able to dispense a small amount – no waste."

"Bonding agent wets the tooth nicely – margins are not visible."

"Great dispenser - indicator window is helpful."

"Not enough material dispensed with each click."

"I prefer the bottle dispenser."

GrandTEC



VOCO America, Inc.

(888) 658-2584 | www.vocoamerica.com

Description:

GrandTEC is an individually packaged resin-impregnated glass fiber strip. It is indicated for orthodontic retention, stabilization of mobile teeth, support of traumatized teeth, reinforcement of provisional bridges, and for temporary bonded pontics after extraction or during implant osseointegration. Each strip is 2 mm x 55 mm and is individually packaged in a foil packet. The strip can be adapted directly on the teeth or on a model. Flowable or sculptable composite may be used in conjunction with **GrandTEC**. It cures when exposed to a conventional LED or halogen curing light. The kit contains five glass fiber strips, instructional CD, and manufacturer's instructions. **GrandTEC** was evaluated by 21 consultants in 98 uses. The product received an 88% clinical rating.



Suggested Retail Cost

\$269.00/Kit (Set of 5)

Product Features

Having the fiber strip pre-wet with resin eliminates a step chairside and makes **GrandTEC** quick and easy to use. Consultants liked the size and translucency of the fibers. **GrandTEC** is easiest to cut with sharp, thin scissors when it is left on the foil package. The strip is flexible enough to adapt to the teeth for a variety of applications. Storage of the flat packets is compact, and refrigeration is not required. Fifty-seven percent of consultants reported that **GrandTEC** was better than their current sectional matrix system and 29% reported that it was equivalent. Sixty-two percent would switch to **GrandTEC** and 81% would recommend it.

Clinical Tips

- Handle the strip with forceps to avoid contaminating the fibers during manipulation.
- To avoid fraying of the fibers, leave the strip on the foil while cutting it to length.
- Measure the span carefully and pre-cut the fibers with sharp suture scissors.
- **GrandTEC** must be covered with a layer of composite for all applications. ■

Consultants' Comments

"The manufacturer's directions were concise and complete."

"I liked the size, rigidity and translucency of the fibers."

"It was quick and easy to use for the fabrication of a temporary bridge."

"It was easy to cut, adapt, and polish."

"The length and width of the fibers were more than adequate."

"If the individual strands separate, placement is more difficult."

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