

# THE DENTAL ADVISOR™

“Improving Patient Care Through Research & Education”

**June 2010**

Vol. 27, No. 05

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*An Editors' Choice award is given to products recognized by our editors as being a unique or significant product.*

## RATINGS

|           |      |
|-----------|------|
| Excellent | ++++ |
| Very Good | +++  |
| Good      | ++   |



*Photography by Puri Karani*

## Dental Photography

When THE DENTAL ADVISOR evaluated cameras in 2004, it was concluded that a professional SLR camera was the product of choice. That recommendation still holds true today. The advantages of immediate image review and image quality similar to 35 mm make a digital camera a piece of clinic equipment that will satisfy even the most discernable practitioners.

In this issue of THE DENTAL ADVISOR, Dr. Doug Thompson discusses current trends in the camera market and advantages of dental photography and shares tips for capturing a successful series of photos.

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## Dental Photography

The SLR camera market is currently dominated by two major players: Nikon and Canon. Recently, both companies added new image stabilization or vibration reduction lenses to their systems. These lenses have added expense and weight to the new systems making the older packages attractive if you can still find them. However, the new systems work well and will produce excellent images. Similar to the old systems, the new cameras feature a detachable macro lens, a removable macro flash unit, and TTL metering, a must for professional results. Evaluating these systems is beyond the scope of this article. Contact Washington Scientific Camera Company, 615 Wood Ave., Sumner, Washington 98390, or Norman Camera at [www.normancamera.com](http://www.normancamera.com). Both of these companies can discuss the critical details and subtle differences between the available systems.

Photography is a fantastic communication medium that is significantly underutilized. Patients are continuing to get more and more consumer information from a variety of sources about their dental care. Never has there been more pressure to communicate effectively. Patient communication is only one of several reasons to use digital photography, some others include:

- Treatment Planning / Advanced Education
- Case Documentation
- Self Evaluation
- Laboratory Communication
- Marketing and Patient Presentation

### Camera Selection

A wide variety of cameras exist today. As expense increases, quality and the flexibility to manipulate the images increase. There are many point and shoot systems that promise to be quick and easy, but they lack some of the necessary components to render excellent photos. Having a good camera system is invaluable and the versatility and quality of single lens reflex digital cameras make them the product of choice.

There are a variety of resources to obtain camera equipment today. Before making a purchase, be sure the source is familiar with dental photography and can provide personal support after the purchase of the system. Some features that are keys for success of a good professional camera system are:

- A true macro 100-105 mm lens. A macro lens with this focal length forces correct distance from patient to allow proper light access to the patient.
- Ring and point flash. This type of flash properly illuminates the field of view and can be used to show contour.
- TTL Metering for correct exposure. TTL stands for through the lens and is how the light back to the camera sensor is measured. This type of metering gives good consistent exposures.
- Technical support from someone that takes and understands dental photography.



***Example of a professional digital SLR camera***

With a reduced price, color, clarity, consistency, depth of field, exposure control and/or camera durability are sacrificed. Considering the necessary features, or keys for success, these requirements eliminate most systems and narrow the selection to mainly two: Canon and Nikon. In addition to a good camera system, two reflective mirrors (1B Buccal Mirror, one 4A Adult Occlusal Mirror), two pair of plastic cheek retractors, and one Columbia wire cheek retractor (**Columbia Cheek Retractor**, Hu-Friedy Mfg. Co., Inc.) are needed.

### Treatment Planning - Fourteen Images

Treatment planning and advanced education requires flexibility in editing and manipulating digital images. Fourteen images make up the series for standardized data gathering and comprehensive treatment planning.

Taking the photos in the suggested order 1-14 will allow grouping of views with similar settings.



*Additional equipment necessary to capture intraoral photos*

*"Nancy"*



*Example of 14 views used for treatment planning*

# Dental Photography

## Distance Camera Settings

For each group of views, pre set the distance on the lens and take all the photos in that group (for all patients) at the same patient-lens distance and at the same magnification. Distances are approximate and will change slightly depending on the brand and exact focal length of the lens you purchase.

- Views 1-3 will be taken at about 8 feet.
- Views 4-9 will be taken at about 1.25 feet.
- View 10 is the closest at about 1.12 feet.
- Views 11-12 are at about 1.35 feet.
- Views 13-14 are at about 1.55 feet.

Distance changes based on filling the field of view. As you move farther from the patient, more of the patient's head will fill the frame. An important concept is to standardize the distance settings for your particular camera and use the same distances all the time. Do this with all patients to keep all before and after magnifications the same.



*Example of a before and after full-face view that were taken four years apart. Full face full smile view is about 8 feet from the patient with frame filled from the bottom of the chin to the top of the head.*

## Other Camera Settings and Suggestions

- All exposures will be made in “M” or manual mode.
- Only two aperture settings will be used, either F8 or F32.
- Autofocus will be used on only views 1-3. Once autofocus is turned off, simply pre set the lens distance and “lean in and out” toward your patient for sharp focusing. Squeeze the shutter button at the exact time the field is in clear view as you move away from and toward the patient during focusing.
- For views 1-4 make a non-distracting background by placing color photo paper (Blue Lake, Superior Co., available at camera stores) in a lightweight picture frame 20” x 24”.
- Views 9-14 require the use of retractors.
- Mirrors are used in views 11-14. Mirror fogging can be eliminated by heating either in hot water or with a heating pad.
- For all images keep the camera level, with the front of the lens perpendicular to the maxillary occlusal plane and parallel to the face. This reduces distortion from taking the photo at an angle too high or too low to the patient.

*Dr. Thompson discusses the different photography views and the reasons for taking them at [www.dentaladvisor.com](http://www.dentaladvisor.com). ■*

### Doug Thompson, D.D.S.

**Dr. Thompson** began his dental career at age 18, working as an in-house laboratory technician. Over the next ten years, he worked and studied full time and graduated from University of Michigan School of Dentistry in 1996. He then completed a one-year hospital-based V. A. Residency Program in General Dentistry. In 1997, **Dr. Thompson** bought an established private practice in Bloomfield Hills, Michigan, and practices there today. **Dr. Thompson** has completed hundreds of hours of continuing education and has studied extensively at the Kois Center in Seattle, Washington led by Dr. John Kois. In 2005 **Dr. Thompson** became a Mentor to students, and in 2008 he earned the distinction of Clinical Instructor. **Dr. Thompson** is the founder of Impact Dental Solutions, a company focused on assisting dentists with implementation strategies to put knowledge to work in their daily practices. **Dr. Thompson** can be reached at [dthompson@villagedentaloffice.com](mailto:dthompson@villagedentaloffice.com) or 248-642-1000.



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## Description

**Panasil** is a line of addition-curing silicones (VPS) impression materials with hydrophilic properties. A variety of five viscosities and two set times exists. **Panasil** can be used for one- or two-step crown-and-bridge impression techniques as well as denture and reline impressions. Three viscosities of the fast-set material were evaluated: **Panasil tray fast** and **Panasil initial contact light fast** and **x-light fast**. **Panasil tray fast** is a heavy-bodied material for use in the tray and for functional impressions. **Panasil initial contact fast** is a syringeable impression material for capturing fine detail around prepared teeth and soft tissue. **Panasil initial contact fast** has a working time of one minute with an intraoral setting time of two minutes; total setting time is three minutes. **Panasil initial contact light fast** is available in 50-ml automix cartridges. **Panasil tray fast** is also available in cartridge and foil bags for use in an automatic mixer. Each box contains two 50 ml cartridges of material with 6 or 12 mixing tips. **Panasil** was used by 21 consultants in 325 cases. **Panasil** received a 96% clinical rating.

### Suggested Retail Cost

- Panasil initial contact: \$48.00/ 2 × 50-ml, 12 mixing tips
- Panasil tray: \$38.00/ 2 × 50-ml, 6 mixing tips

## Editors' Observations

### Manufacturer's Instructions/Packaging

Consultants rated instructions and packaging as good. It was suggested that *light* and *x-light* materials be packaged in small syringes.

### Ease of Mixing

Consultants reported that **Panasil** was easy to mix. The heavy-bodied material extruded easily compared to most heavy-bodied materials.

### Viscosity of Light/X-Light/Tray Material

Eighty-one percent of consultants used a one-step technique and 67% preferred the heavy-body/light-body combination. The *light/x-light* material blends seamlessly with the tray material.

### Working/Setting Time

Working times received a high rating. Consultants observed that setting times seemed to be slower than indicated in the instructions.

### Ease of Removal from Mouth

Ease of removal of impressions from the mouth received a good rating.

### Taste/Scent

Taste and scent received good ratings.



## Consultants' Comments

- ♦ "I like the viscosity of the light body--little to no voids, bubbles or drags."
- ♦ "The heavy-bodied material extruded easily compared with most heavy-bodied materials. The light- and heavy-bodied materials always blended together seamlessly and the heavy bodied material provided excellent detail without drag."
- ♦ "Easy to use, fast setting, good color contrast and good flow."
- ♦ "The setting times seemed to be slower than indicated in the instructions."
- ♦ "Put light and x-light materials in small syringes."

### Tear Resistance

No tearing was reported, and labs could pour the impressions multiple times.

### Accuracy/Detail

Consultants reported that **Panasil** had excellent detail. The tray material provided excellent detail without drag.

### Lack of Voids/Bubbles

Consultants reported that **Panasil** had few to no bubbles when mixed.

### Color Contrast/Ease of Reading Margins

The good color contrast of **Panasil** enhances the ability to read detail in the impression.

### Overall Rating

Forty-three percent of consultants reported that **Panasil** was better, whereas 57% reported it was the same as their current impression material. Seventy-one percent would switch and 95% would recommend it.

## Clinical Tips

- Blow air on the preparation after syringing the light body material to push the material below the margins—excellent detail without any air bubbles and voids.
- Wait a little bit longer than the recommended setting time to ensure complete set. ■

# CLEARFIL MAJESTY Esthetic with CLEARFIL SE BOND and CLEARFIL S<sup>3</sup> BOND 2-year Clinical Performance + + + + +

Kuraray America  
800.879.1676  
www.kuraraydental.com

## Description

**CLEARFIL MAJESTY Esthetic** is a nano-filled, light-cured, radiopaque composite indicated for anterior and posterior Class I–V restorations. The high refractive matrix of this nano-filled composite is designed to diffuse light to mimic the translucency and refraction of natural teeth. **CLEARFIL MAJESTY Esthetic** is available in 23 Vita shades: A1, A2, A3, A3.5, A4, B1, B2, B3, C2, C3, C4, D2, D3, D4, T, E1, E2, E3, OA2, OA3, OA4, BL1, and BL2 in a 2 ml syringe (shade T has 3.7 g; the others have 3.6 g) or 20, 0.26 g unit-dose tips. This product received a 99% rating.

## Clinical Evaluation Protocol

- 252 **CLEARFIL MAJESTY Esthetic** restorations were placed using **CLEARFIL S<sup>3</sup> BOND** bonding agent.
- 63 **CLEARFIL MAJESTY Esthetic** restorations were placed using **CLEARFIL SE BOND** bonding agent.
- Class I–V restorations were placed in the posterior region (Figure 1).
- 141 restorations in 69 patients were available for evaluation of clinical performance up to 24 months after placement (Figure 2). Restorations were evaluated on a 1–5 rating scale: 1 = poor, 2 = fair, 3 = good, 4 = very good, 5 = excellent.

## Clinical Observations

### Resistance to Fracture

After two years in service, nearly all of the **CLEARFIL MAJESTY Esthetic** restorations were rated excellent (Figure 3). One restoration exhibited slight chipping and one restoration fractured, requiring replacement. There was no debonding during the two years since placement.

## Consultants' Comments

- ♦ “The exceptional esthetics at placement was retained after two years.”
- ♦ “Use of **CLEARFIL S<sup>3</sup> BOND** made placement very easy and I did not see any marginal leakage at recall.”
- ♦ “The blending with natural tooth structure in the anterior and posterior regions makes this an excellent composite of choice.”

### Esthetics

**CLEARFIL MAJESTY Esthetic** exhibited excellent esthetics both in the anterior and posterior areas (Figure 3). The material handled well during placement in all areas of the mouth and it blended well with the surrounding tooth structure. After two years, these restorations continued to exhibit excellent esthetics both in luster and shade stability when used with the self-etching bonding systems, **CLEARFIL S<sup>3</sup> BOND** and **CLEARFIL SE BOND**.

### Resistance to Marginal Discoloration

All of the **CLEARFIL MAJESTY Esthetic** restorations were placed using either self-etching bonding agent, **CLEARFIL S<sup>3</sup> BOND** or **CLEARFIL SE BOND**. Ninety-nine percent of the restorations were resistant to marginal discoloration after 2 years (Figure 3).

### Wear Resistance

As a nano-filled composite, **CLEARFIL MAJESTY Esthetic** maintained optimal wear resistance both in the anterior and posterior areas (Figure 3).

### Sensitivity

Minimal sensitivity was reported following initial placement using either **CLEARFIL S<sup>3</sup> BOND** or **CLEARFIL SE BOND**, and there were no issues of tooth sensitivity reported during the two-year recall evaluation (Figure 3).

*continued on pg 9*

Distribution of CLEARFIL MAJESTY Esthetic Restorations at Recall (141)

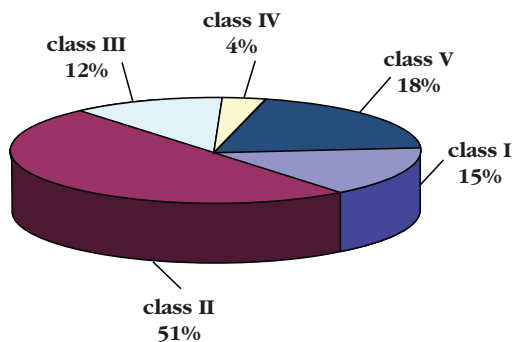


Figure 1

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Age of CLEARFIL MAJESTY Esthetic Restorations (141) at Recall

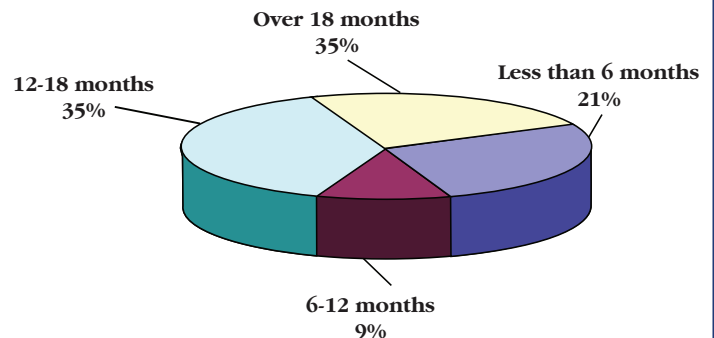


Figure 2

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# CLEARFIL MAJESTY Posterior with CLEARFIL S<sup>3</sup> BOND 2-year Clinical Performance + + + + +

Kuraray America  
800.879.1676  
www.kuraraydental.com

## Description

**CLEARFIL MAJESTY Posterior** is a nano-hybrid, light-cured, radiopaque composite that is filled 92% by weight. Anterior and posterior class I-V restorations are indicated with its properties of high strength and low polymerization shrinkage. The material is available in 4.9 g syringes and 0.25 g unit-dose pre-loaded tips in six shades: A1, A2, A3, B2, E2 and E3. This product received a 99% rating.

## Clinical Evaluation Protocol

- 605 **CLEARFIL MAJESTY Posterior** restorations were placed using **CLEARFIL S<sup>3</sup> BOND**, a 7<sup>th</sup>-generation bonding agent.
- Class I, Class II and Class V posterior restorations were placed on molars and premolars (Figure 1).
- 327 restorations in 62 patients were available for evaluation of clinical performance up to 24 months after placement (Figure 2).
- Restorations were evaluated on a 1-5 rating scale: 1 = poor, 2 = fair, 3 = good, 4 = very good, 5 = excellent.

## Clinical Observations at Placement

### Ease of Placement, Packability, Carveability

**CLEARFIL MAJESTY Posterior** has adequate firmness for packing against a matrix band and maintaining its position where placed (Figure 3). While the composite has a fairly high viscosity, it is easy to extrude from the unit-dose capsules. The unit-dose delivery was overwhelmingly preferred by consultants, compared to the bulk syringes. Sculpting and carving occlusal anatomy is easier with an instrument wetted with unfilled resin. The consistency of

## Consultants' Comments

- ♦ "The success of a posterior composite is related to strength. None of my restorations fractured."
- ♦ "Exceptional posterior esthetics at placement and after two years in service."
- ♦ "The wear of the composite was consistent with that of natural dentition."

**CLEARFIL MAJESTY Posterior** is somewhat waxy, which drags and pulls with a dry instrument.

### Shade Match/Esthetics, Vitality

**CLEARFIL MAJESTY Posterior** exhibits a nice balance of translucency and opacity to block underlying stained dentin yet achieves very good blending with the enamel margins. All restorations were rated very good to excellent for esthetics and vitality regardless of whether a single Vita shade was used or if it was overlaid with an enamel shade (Figure 3).

### Finish/Polish

The composite is easy to finish with standard rotary diamonds and finishing instruments (Figure 3). The polish is acceptable for posterior restorations. The final surface was often reported to be slightly grainy.

## Clinical Observations at Recall

### Resistance to Fracture

Ninety-nine percent of **CLEARFIL MAJESTY Posterior** restorations were in excellent condition after two years in service. Only three restorations exhibited minor fractures and one required replacement. There were no debonds during the two years since placement (Figure 4).

*continued on pg 9*

Distribution of CLEARFIL MAJESTY Posterior Restorations at Recall (327)

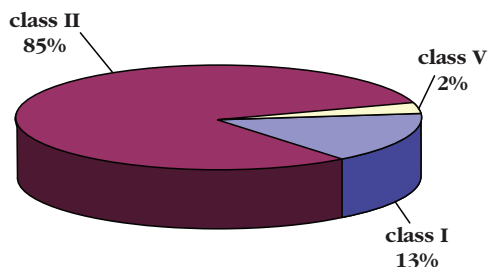


Figure 1

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Age of CLEARFIL MAJESTY Posterior Restorations (327) at Recall

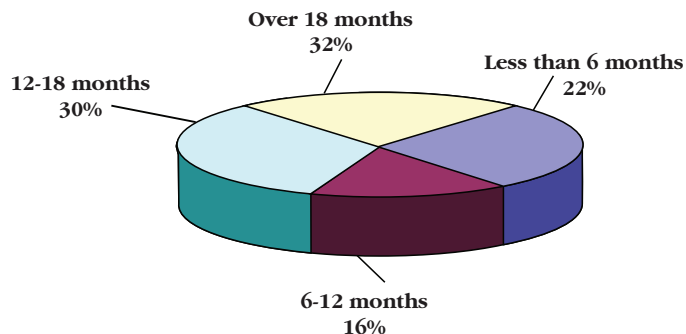


Figure 2

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## CLEARFIL MAJESTY Posterior with CLEARFIL S<sup>3</sup> BOND 2-year Clinical Performance + + + + +

*continued from pg 8*

### Esthetics

**CLEARFIL MAJESTY Posterior** exhibited excellent posterior esthetics at placement. It blended well with the surrounding tooth structure and displayed adequate opacity to mask most amalgam stains. After two years, these restorations continue to exhibit excellent esthetics both in luster and shade stability (Figure 4).

### Resistance to Marginal Discoloration

The 7<sup>th</sup>-generation, self-etching bonding agent, **CLEARFIL S<sup>3</sup> BOND**, was used bond the **CLEARFIL MAJESTY Posterior** restorations. The majority of the restorations were resistant to staining after two years. (Figure 4).

### Wear Resistance

All posterior composites undergo considerable stress during function. As a high-strength, low-shrinkage material, **CLEARFIL**

**MAJESTY Posterior** restorations showed minimal evidence of wear (Figure 4).

### Sensitivity

Minimal postoperative sensitivity was reported following initial placement and there were no instances of tooth sensitivity reported during the two-year recall evaluation (Figure 4).

## Summary

Three hundred twenty-seven **CLEARFIL MAJESTY Posterior** restorations were recalled at two years in 62 patients. At two-year recall, the majority of restorations exhibited excellent esthetics equivalent to that at initial placement. All restorations remain intact with almost no fracture, marginal discoloration or wear. No sensitivity was reported at recall. ■

CLEARFIL MAJESTY Posterior Ratings at Placement

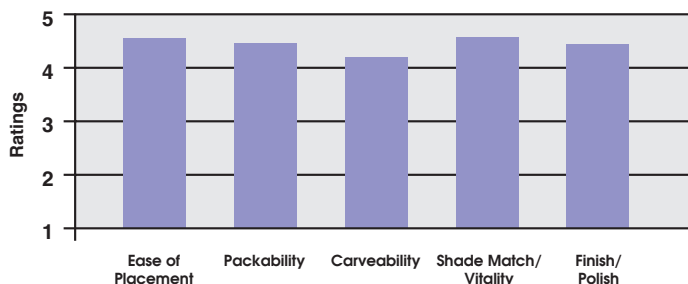


Figure 3

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CLEARFIL MAJESTY Posterior at 2-year Recall

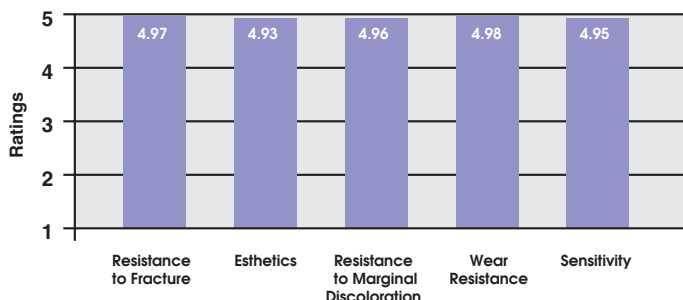


Figure 4

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## CLEARFIL MAJESTY Esthetic with CLEARFIL SE BOND and CLEARFIL S<sup>3</sup> BOND 2-year Clinical Performance + + + + +

*continued from pg 7*

## Summary

One hundred twenty-nine **CLEARFIL MAJESTY Esthetic** restorations in 62 patients were recalled at two years. At two-year recall, the majority of restorations exhibited excellent esthetics and surface anatomy, equivalent to that at initial placement. Marginal discoloration was only noted in two very large posterior restorations. No post-operative sensitivity was reported at recall. ■

CLEARFIL MAJESTY Esthetic at 2-year Recall

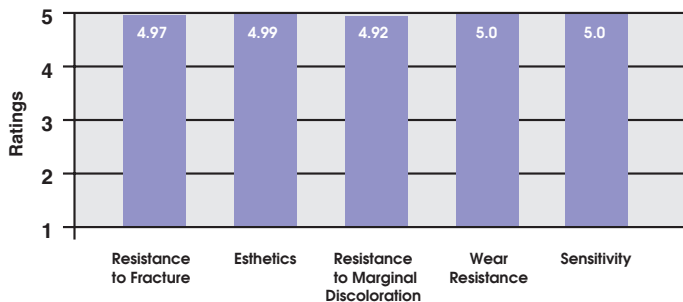


Figure 3

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# IPS e.max 4-year Clinical Performance + + + + +

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a sample or more information!



## Description

**IPS e.max Press** (Ivoclar Vivadent) is a high-strength, lithium disilicate ceramic used for anterior and posterior restorations as well as three-unit bridges. **IPS e.max** can be overlaid with **IPS e.max Ceram** to optimize esthetics. This product received a 96% clinical rating.

## Clinical Evaluation Protocol

Four dentists placed 440 **IPS e.max** restorations in 260 patients over a four-year period.

Two hundred thirty-six restorations were recalled over a six-month period (Figure 1).

Approximately half of these were in function for four years while the other half were in function for three years. The restorations were crafted by Nellmar Laboratory for posterior and anterior teeth, with a variety of crowns, inlays/onlays and bridges (Figure 2).

Before cementation the internal surfaces of all restorations were etched with 5% hydrofluoric acid gel for 20 seconds, then rinsed and coated with a silane such as **Monobond Plus**. All restorations were cemented with either self-adhesive resin or esthetic resin cements (Figure 3). The restorations were recalled at approximately



Fig 5 IPS e.max #3 onlay at 4 years



Fig 6 IPS e.max bridge #8-#10 at 4 years.

## Consultants' Comments

- ◆ "Beautiful shade match."
- ◆ "Very nice fit – margins were undetectable."

## Patients' Comments

- ◆ "The crown looks better than my other teeth."
- ◆ "Looks great - my bite is perfect."

AGE OF RESTORATIONS AT RECALL

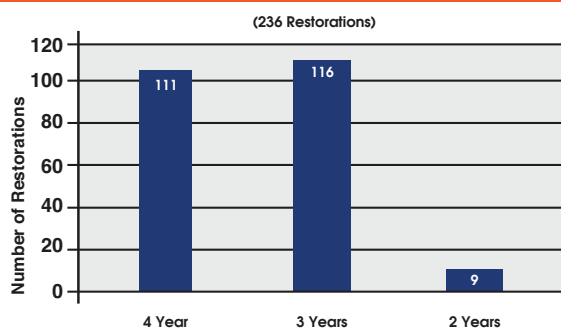


Figure 1

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DISTRIBUTION OF RECALLED RESTORATIONS

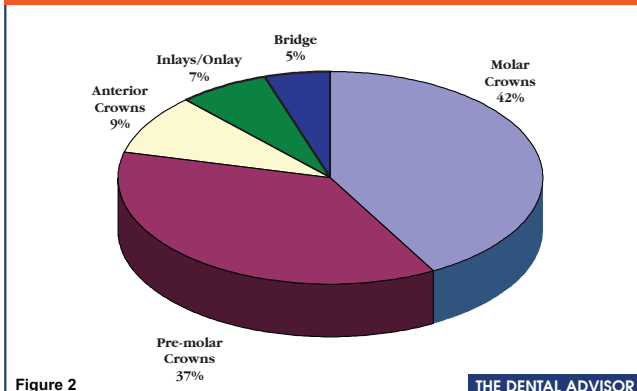


Figure 2

THE DENTAL ADVISOR

six-month intervals. During the recall five areas were evaluated and rated on a 1 to 5 scale (1=poor, 2=fair, 3=good, 4= very good, 5= excellent): 1. Esthetics 2. Resistance to fracture/chipping 3. Resistance to marginal discoloration 4. Sensitivity 5. Debonding

## Results of Recall

### Esthetics

Ninety-four percent of the **IPS e.max** restorations received a five or an excellent rating (Figure 4). The restorations were not only clinically acceptable but also of superior esthetic quality. Many patients remarked positively on the esthetics of the restorations. Figures 5 and 6 show an **IPS e.max** onlay and bridge, respectively, at four years. Only 6% of the restorations were slightly opaque and lacked sufficient translucency which could be a function of ingot selection. **IPS e.max** is available in four translucencies (LT, HT, MO, HO).

### Resistance to Fracture/Chipping

Of the 236 restorations recalled, one fractured and needed replacement (Figure 4). This was a second molar crown. Only six restorations, two onlays and four crowns, exhibited minor chipping that was smoothed and polished, and none needed to be replaced. Of the chipped crowns, two were second molars and two were first molars. Only 2.5% of the restorations exhibited some chipping at

*continued on pg 11*

# TOPEX ReNew + + + + 1/2

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www.sultanhealthcare.com

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a sample or more information!



## Description

**TOPEX ReNew** is designed to be used as regular toothpaste and is prescribed and dispensed by dentists. **ReNew** contains 5,000 ppm fluoride with *NovaMin* and no milk by-products or proteins. The manufacturer describes **ReNew** as occluding tubules and remineralizing tooth structure to provide sensitivity relief. It is intended for home use by patients with tooth sensitivity; after dental bleaching; with exposed root surfaces; and high caries risk due to xerostomia, medications and orthodontic treatment. The recommended quantity per use is a pea-sized amount of paste. A box contains 10, 1.4 g tubes of **ReNew**; and with patient instructions. **ReNew** was evaluated by 41 patients who used it once or twice a day. **ReNew** received a 91% clinical rating.

## Suggested Retail Cost

- \$140.00/case (10 tubes of toothpaste)

## Product Features

The patients evaluating **ReNew** reported having sensitivity, dry



## Patients' Comments

- ◆ "Great taste - clean feeling."
- ◆ "Got rid of the tooth sensitivity right away."
- ◆ "Helped to reduce the decalcification along my gumline."
- ◆ "I didn't like the film left on my teeth. I prefer o rinse."

mouth or root cavities. **ReNew** received average to above average ratings for taste, freshness of breath, and reduction of tooth sensitivity. Seventy-two percent of patients felt their teeth felt smoother and 35% felt their teeth were brighter. Patients reported that they noticed results after one to two weeks. A single tube was reported to last about one to two months. Forty-two percent of patients reported that **ReNew** was better than their current toothpaste and 53% reported it was equivalent. Fifty-two percent would switch and 48% would recommend it. ■

# IPS e.max 4-year Clinical Performance + + + + +

CEMENTS USED (%)

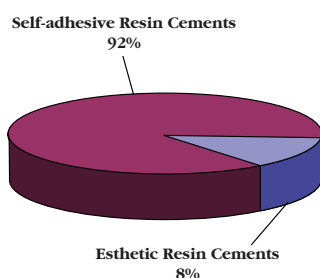


Figure 3

THE DENTAL ADVISOR

*continued from pg 10*

four years and only 0.5% had fractured and needed replacement. This rate is lower than other ceramics documented by THE DENTAL ADVISOR over the past 26 years.

## Resistance to Marginal Discoloration

The lack of marginal discoloration of the restorations was excellent in 95% of the cases (Figure 4). Leakage at the margins is not just related to the fit but more to the bonding and the resin cement. In 3% of the recalled cases, some graying at the margins was noted but none necessitated their replacement.

## Sensitivity

Only four cases (2%) of postoperative sensitivity were reported by patients (Figure 4). These were mild in nature and subsided over

time.

## Debonding

Nine restorations (4%) debonded and needed to be recemented (Figure 4). This debonding rate is similar to debonding rates of other all-ceramic restorations monitored over 26 years by THE DENTAL ADVISOR and is related to the preparation and the cement rather than the ceramic.

## Summary

**IPS e.max Press** has proven to be a very esthetic, high-strength, durable material with excellent clinical performance over the four-year recall period. Its performance has exceeded that of traditional PFM restorations as well as many all-ceramic restorations. **IPS e.max Press** is highly recommended by THE DENTAL ADVISOR. ■

IPS E.MAX PRESS 4 YEARS

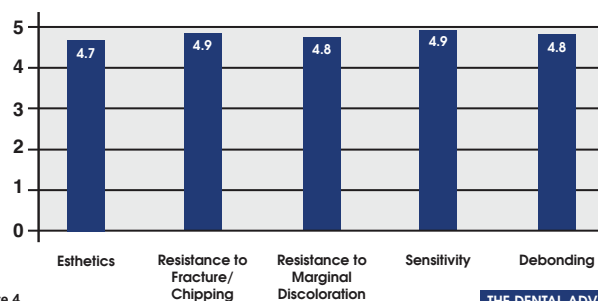


Figure 4

THE DENTAL ADVISOR

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## Description

The **E-STATIS Electric Handpiece System** can be mounted either internally or externally on the dental unit and offers a removable LCD touch screen which can be integrated into any location. All **E-STATIS** components are modular and can be placed anywhere you choose. The unit comes programmed with three standard operative modes and five endodontic settings. All programs are fully customizable. The **E-STATIS** motor has a speed range from 100–40,000 rpm and is fully autoclavable with brushless technology. It comes complete with a three-year warranty for both the motor and control box. The 1:5 attachment (high speed) and 1:1 attachments offer a dual light source, a three-port water spray universal E-Style motor and can be sterilized to 135°C. Program options include auto-stop, auto-reverse, auto-forward, auto-reverse forward; speed; torque and light output. The system includes the **E-STATIS** motor, electric control box, touch screen, and operators manual and product literature. The “E- style” attachments available through *SciCan* include a 1:5L speed increasing attachment, 1:1L attachment, 4:1 endodontic attachment, and a 1:1 ST straight attachment. **E-STATIS** was evaluated by six Editors in 325 uses. **E-STATIS** received a 94% clinical rating.

### Suggested Retail Cost

- \$3200.00

## Editors' Observations

### Manufacturer's Instructions

Editors' rated the instructions as very good. The instructions thoroughly covered use of the **E-STATIS** system.

### Appearance and Design

Appearance and design were rated excellent. For this evaluation, the control boxes were placed on the bracket trays rather than being installed internally in the dental units. Editors would have preferred the internal installation for a more streamlined appearance. The touch screen has a modern appearance.

### Ease of Integration

Once installed, **E-STATIS** was easy to use and was rated excellent by the Editors. The motor connects to one of the ports on the delivery unit and responds to the foot pedal like any other handpiece. As the user switches from high-speed to low-speed attachments, it is important to remember to touch the screen to change the program that corresponds to the attachment in use.

### Connecting Attachments to Motor

Attachments require a firm push and “click” into place when fully seated.

### Programming Motor Torque

Ease of programming motor torque was rated excellent. All of the



## Editors' Comments

- ♦ “I love the presets most; I did not have to adjust.”
- ♦ “Touch screen is easy to use - very responsive, even with gloves on.”
- ♦ “Handpieces are easy to maintain and sterilize.”
- ♦ “Excellent torque.”
- ♦ “Control box takes up a lot of room when not mounted internally.”
- ♦ “Rotary files seat deeply into the endodontic handpiece, covering some laser marks on the files and reducing the working length by a millimeter.”

programming on the touch screen is intuitive and can be changed quickly.

### Convenience of Preset Operative and Endodontic Settings

Editors rated the operative settings as excellent and did not need to change the factory presets for normal high-speed and low-speed use. The endodontic settings required customization based on the recommendations of the manufacturers of the rotary file systems being used.

### Usefulness of Common Handpiece and Customizable Transmissions (Gear Ratios)

Editors liked the gear ratios provided. Both common and customizable transmissions were rated as very good.

### Convenience of Removable Touch Pad

In this evaluation, all of the Editors found it was most convenient to leave the touch screen on the control box. None mounted it remotely. The touch screen was easy to use and was rated as very good.

### Noiseless Operation and Smoothness of Operation

Overall **E-STATIS** provides operation that is smoother and quieter than air-driven handpieces.

### Torque Output

Torque output was rated very good. Procedures could easily be accomplished with the pre-set programs.

### Feel of Handpiece/Ergonomics

Feel of the handpiece was rated good. Several Editors commented

*continued on pg 13*

## F-Splint-Aid + + + + 1/2

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a sample or more information!



### Description

**F-Splint-Aid** fiberglass ribbon is made of six layers of ultra-thin, 4 mm wide fiberglass band, sewn together and saturated with bonding agent. **F-Splint-Aid** is a ready-to-use solution for splinting needs including stabilization of avulsed and periodontally involved teeth. Each bottle treats an average of four to five cases. No special scissors are needed to cut **F-Splint-Aid** to length. Metal application clips, provided with the kit, use spring action to hold the ribbon in interproximal spaces. The kit contains **F-Splint-Aid** bottle with 12 cm of fiberglass ribbon soaked in bonding agent and 5 application clips. **F-Splint-Aid** was used by eight consultants. It received a 92% clinical rating.

### Suggested Retail Cost

- \$102.00/Kit

### Product Features

The bottle containing **F-Splint-Aid** is similar to common dispensers of gingival retraction cord. Consultants liked the convenience of **F-Splint-Aid** with its pre-wetted ribbon that is easy to cut and place. The resin makes the ribbon slippery, and it is best handled with forceps. The application clips are a useful solution for adapting the ribbon to the teeth and holding it in place for light curing. Thirty-eight percent of consultants reported that **F-Splint-Aid** was better than their current splint system, whereas 62% reported it was equivalent to the product they currently use. Seventy-five percent would switch and 100% would recommend it.



### Consultants' Comments

- ◆ "Compact kit is easy to store."
- ◆ "Dispensing is great! The pre-wetting with bonding agent saves a step."
- ◆ "Ribbon does not fray when cut."
- ◆ "Application clips to contour the ribbon into interproximal spaces were handy."
- ◆ "Long shelf life - 5 years - is great for a product that is only needed occasionally."
- ◆ "I would like a narrower size."

### Clinical Tips

- Apply **F-Splint-Aid** to etched and bonded tooth surfaces.
- Cut a little longer piece to account for adaptation to the interproximal space.
- Ribbon may be cut lengthwise if a narrower piece is desired.

**Editor's Note:** Since the completion of the evaluation of **F-Splint-Aid**, the manufacturer has informed THE DENTAL ADVISOR that they are developing a new narrower version. ■



Editors' Choice

## E-STATIS Electric Handpiece System + + + + 1/2

*continued from pg 12*

that the handpiece was heavy, which is common to electric handpieces.

### Dual Light Source

Light output is excellent from the dual light source. The lights are separated from the smooth curves of the handpiece by a rectangular surround. These sharp angles at times interfered with access to the tooth during use.

### Access in Mouth (Head Size)

Editors reported that the head size was large and they would like an optional small-sized, high-speed attachment.

### Three-port Spray

Effectiveness of the three-port water spray was rated as very good.

Abundant water to the operative area kept debris washed off. Editors that had **E-STATIS Systems** installed on continental-style delivery units reported that water dripped from the handpiece after the motor was turned off.

### Cleaning the Control Box, Motor and Attachments

The control box and touch screen are sealed for protection from moisture and can be wiped with available disinfectants. Sterilizing the motor and attachments in an autoclave follows familiar routines.

### E-STATIS Electric Handpiece System Overall

Thirty-three percent of Editors reported that **E-STATIS** was better, whereas 67% reported it was the same as their current electric handpiece. Sixty-seven percent would switch and 100% would recommend it. **E-STATIS** received a 94% clinical rating. ■

# Estelite Sigma Quick 1-year Clinical Performance + + + + +

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www.tokuyama-us.com

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## Description

**Estelite Sigma Quick** is a supra-nano-filled, low-shrinkage composite indicated for anterior and posterior class I-V restorations. **Estelite Sigma Quick** implements RAP (Radical-Amplified Photopolymerization) initiator technology, which offers increased working time of 90 seconds under ambient light, while decreasing the curing time to 10 seconds with a halogen light. **Estelite Sigma Quick** is available in both syringes and pre-loaded tips (PLT) in shades: A1, A2, A3, A3.5, A4, A5, B1, B2, B3, B4, C1, C2, C3, OA1, OA2, OA3, OPA2 (opalescent), BW (bleach white), WE (white enamel), and CE (clear enamel). This product received a 98% rating.

## Clinical Evaluation Protocol

- 1163 **Estelite Sigma Quick** restorations were placed using a wide variety of 5<sup>th</sup>-, 6<sup>th</sup>- and 7<sup>th</sup>-generation bonding agents.
- 141 restorations were eligible for 1-year recall.
- 126 restorations in 65 patients were available for evaluation of clinical performance up to 12 months after placement.
- Class I-V restorations were placed and recalled in the anterior and posterior regions (Figure 1). Restorations were evaluated on a 1-5 rating scale: 1 = poor, 2 = fair, 3 = good, 4 = very good, 5 = excellent.

## Clinical Observations

### Resistance to Fracture

**Estelite Sigma Quick** demonstrated excellent performance during the first year in service (Figure 2). No restorations exhibited

Distribution of Estelite Sigma Quick Restorations Recalled at 1 Year

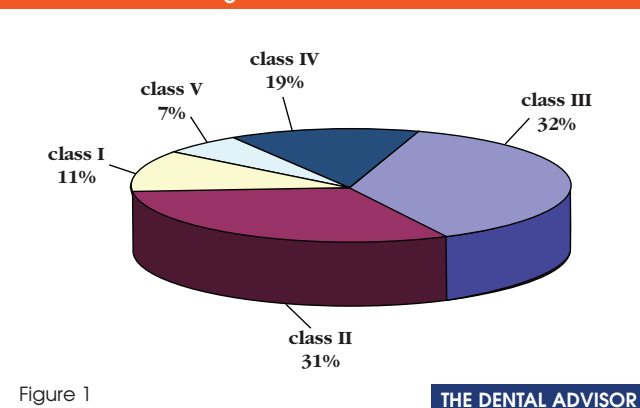


Figure 1

THE DENTAL ADVISOR



## Consultants' Comments

- ♦ "I have seen exceptional results in both the anterior and posterior regions over one year. This is truly a versatile material!"
- ♦ "A wide variety of bonding systems were used and minimal marginal leakage was seen at recall."
- ♦ "The excellent shade match and rapid cure time make this my material of choice."

chipping or fracture. One buccal restoration and one incisal restoration have debonded since placement, this is more a function of the bonding agent rather than the composite.

### Esthetics

The variety of shade selection and itsameleon effect resulted in optimal esthetics at placement. **Estelite Sigma Quick** exhibited excellent esthetics both in the anterior and posterior regions during the first year in service (Figure 2). In the majority of cases, one could obtain superior esthetics by using one shade.

### Resistance to Marginal Discoloration

All of the **Estelite Sigma Quick** restorations were placed using total-etch and self-etch bonding agents. Ninety-nine percent of the restorations were resistant to marginal discoloration after one year (Figure 2).

*continued on pg 15*

Results of Estelite Sigma Quick Recall at 1 Year



Figure 2

THE DENTAL ADVISOR

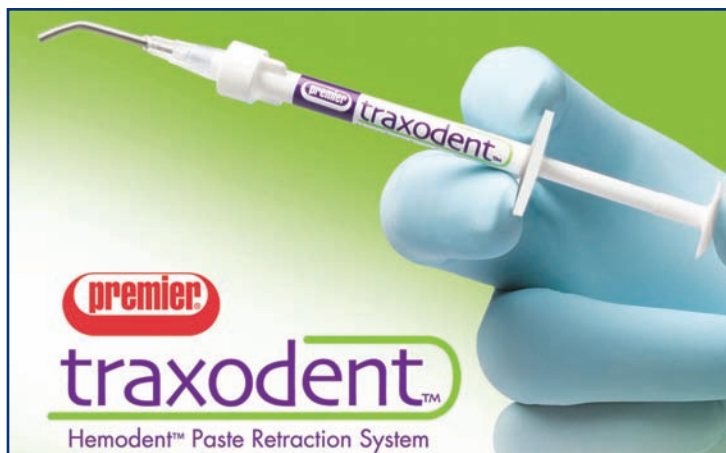
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www.premusa.com

## Description

**Traxodent Hemodent Paste Retraction System** is a 15% aluminum chloride topical gingival retraction paste, formulated to provide gingival retraction and hemostasis. It is intended for use prior to taking an impression, cementation, cavity preparation or wherever hemostasis and retraction are required. The *Starter Pack* includes seven syringes of **Traxodent**, 15 Bendable applicator tips, manufacturer's instructions, cotton retraction caps and *T-LOC™ Triple Tray®* samples, the *Value Pack* contains 25 syringes, 50 applicator tips, manufacturer's instructions and *T-LOC* and retraction cap samples. The *Premier Retraction Caps* are hollow cotton caps designed to enhance gingival retraction and assist hemostasis. Caps are available in three sizes: size 5 (large), size 3 (medium), and size 1 (small). Twenty-one consultants utilized this product. **Traxodent** received a 91% clinical rating.

## Product Features

Consultants liked the ease of use (good viscosity) and the quality of hemostasis achieved. They reported that retraction was improved when cord was used in conjunction with the paste. Traxodent rinses off the tooth well, leaving a clean surface with no residue. Some consultants preferred to use cotton rolls or gauze rather than the retraction caps included with the kit. Thirty-eight percent of consultants reported that **Traxodent Hemodent Paste Retraction System** was better than their current gingival retraction paste, whereas 24% reported it was the same. Eighty-six percent would recommend it.



## Consultants' Comments

- ◆ "I have used Traxodent with my two-cord system and the results are great."
- ◆ "Easy to use; rinses off completely."
- ◆ "This material seemed to work well following a gingivectomy, where cord could not be placed. I would not recommend it if osseous surgery were performed."
- ◆ "It was difficult to get into sulcus without using retraction cord first. Cotton compression caps did not fit well interproximally, so retraction was often insufficient in spots."

## Clinical Tips

- Do not use on persons with known allergy to aluminum chloride.
- Do not use in patients with significant periodontal disease or furcation involvement.
- Use **Traxodent** paste in conjunction with retraction cord.
- Bite on cotton instead of caps provided.
- Use a wet cotton pellet to remove any remaining paste that doesn't come off with rinsing. ■

# Estelite Sigma Quick 1-year Clinical Performance + + + + +

*continued from pg 14*

## Wear Resistance

As a supra-nano-filled composite, **Estelite Sigma Quick** maintained excellent wear resistance both in the anterior and posterior regions (Figure 2).

## Summary

One hundred twenty-six **Estelite Sigma Quick** restorations in

65 patients were recalled at one year. Resistance to debonding was high and almost no microleakage or staining was visible at the composite to tooth interface even though a wide variety of self-etching bonding systems were used. At one-year recall, the majority of restorations exhibited excellent esthetics and resistance to chipping. ■

**VOCO America**  
**888.658.2584**  
**www.vocoamerica.com**

## Description

**Celalux 2** is a cordless LED (light-emitting diode) light-curing unit with an average light output of 1000 mW/cm<sup>2</sup>. The wavelength range of 420-490 nm is intended to cure all composite materials, bonding agents and light-cured cements. **Celalux 2** weighs 3.6 ounces, comes with a flat charging base, and a 360-degree rotating light guide. Battery charging time is 2.5 hours, and operating time with battery at full power is 300, 20-second cycles. **Celalux 2** has two curing modes (standard and soft-start) and four curing times (10, 20, 30, and 40 seconds) that can be stored in the memory, helping to avoid reset time for each use. VOCO offers an optional power light guide with output of 1500 mW/cm<sup>2</sup>. **Celalux 2** was evaluated by consultants in 1305 uses. **Celalux 2** received a 93% clinical rating.

## Suggested Retail Cost

- \$1235/unit

## Product Features

**Celalux 2** is a user-friendly light with uncomplicated programming. Buttons are easy to reach, and a soft beep signals time elapsed. **Celalux 2** was rated very good for ease of use, battery life and ease of disinfection. Consultants appreciated the lightweight and simple design. Forty percent of consultants reported that **Celalux 2** was better than their current LED curing light. Sixty percent would switch to **Celalux 2** and 80% would recommend it.



## Consultants' Comments

- ◆ "Light weight, simple design."
- ◆ "Easy to change programs."
- ◆ "Slim light easily reaches posterior areas."
- ◆ "The orange light shield is opaque, making it is hard to see where you are curing."
- ◆ "Make the light beep every 5 seconds."
- ◆ "Offer a larger curing tip."

## Clinical Tips

- Make sure unit is fully docked to charge.
- Listen for a beep to confirm that the light is fully docked in the charging base. ■

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