

THE DENTAL ADVISOR™

“Improving Patient Care Through Research & Education”



Photography by Mary Yakas

Soft Tissue Management

Tissue management is a critical step in obtaining quality results in restorative dentistry. Crevicular fluid and blood can complicate the procedure as well as the final restoration. Many systems are available to assist in tissue management including a variety of soft tissue lasers, hemostatic agents, and different types of gingival retraction cords and pastes.

This issue of THE DENTAL ADVISOR will discuss advantages and disadvantages of the different systems as well as provide clinical tips for use.

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

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Good	+++

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Soft Tissue Management

Management of soft tissue during the preparation and impression-taking stages is critical for the success of the final impression (traditional or digital). While supragingival margins are the most effective way to achieve clear visualization of the margin, in many situations this is hard to accomplish. In traditional impressions, bleeding due to gingival inflammation can displace the impression material, causing voids and unreadable margins leading to an inadequate final restoration. With digital impressions on the rise, it is even more critical to have visual access and readable margins before scanning. There are three ways to effectively manage and displace the soft tissue: mechanically, chemically, and surgically.

I. Mechanical Displacement

A. Paste Retraction Systems

Paste systems are an effective and tissue-friendly product designed as an alternative to retraction cord placement in areas where mild/moderate gingival retraction is needed, as well as hemostasis. The paste system is relatively atraumatic to gingival tissues, causing little damage to the epithelial attachment, making it ideal for gingival displacement in the esthetic zone. With this technique, the paste is injected into the sulcus and left for a few minutes. Directed pressure is utilized along the margin frequently. The thick paste produces gentle pressure on the sulcus, displacing the soft tissue. The paste sets up in the tissue and is then washed away, leaving a clean, exposed margin. The addition of aluminum chloride in some of the paste systems assists in achieving hemostasis.

Advantages

- Comfortable for patients.
- Little to no damage to the epithelial attachment.
- Retraction and hemostasis achieved.
- Tend to result in less reduction in bond strength of bonding agents.

Clinical Tips for Paste Systems

- Insert the tip towards the long axis of the tooth and slowly express the paste.
- Correctly displaced tissue will have a blanched appearance.
- With paste systems, fluid management and moisture control are essential to the setting reaction and general success.

Gingival Pastes			
Product Name	Company	Active Ingredient/Composition	Material Type
GingiTrac	Centrix	Potassium aluminum sulfate	Addition silicone
Expasyl	Kerr Corporation	15% Aluminum Chloride	Paste
Traxodent Hemodent Paste Retraction System	Premier Dental Products Company	15% Aluminum Chloride	Paste
Premier Retraction Caps	Premier Dental Products Company	None	Retraction Cap



Figure 1 Expasyl in place



Figure 2 Retracted tissue

B. Retraction Cord

Retraction cord is packed in the sulcus between the gingiva and the prepared tooth so as to facilitate preparation of a tooth for an impression. Retraction cords displace tissue mechanically but can also have a chemical effect (contraction and hemostasis) when the cords are pre-impregnated and/or soaked with astringents and vasoconstrictors.

Clinical Tips for Retraction Cord

- Retraction cords should never be forced into the sulcus. Gingival tissue may recede if subjected to too much pressure during the placement of retraction cord.
- Pack cord toward its starting point to avoid pulling the cord out of the sulcus after packing has begun.
- In a deep sulcus, use the double-cord technique to prevent tissue from collapsing over the top of the cord.
- In general, cords are used circumferentially around prepared teeth, whereas pellets and/or cotton strands impregnated

or dipped in astringent can be used for extra retraction in interproximal areas.

Characteristics of Cords

- Cords are usually knitted or twisted to entrap more hemostatic agent.
- Knitted cords appear larger than twisted cords, but shrink and conform to the sulcus as they are being placed into the tissue.
- Cords can range in size for use in different areas of the mouth.



Figure 3 Retraction cord in place



Figure 4 Retracted tissue

Gingival Retraction Cords			
Product Name	Company	Available Sizes	Active Ingredient
First String	Clinician's Choice	XS, S, M, L	Non- Impregnated
Gingibraid+	Dux Dental	Fine, S, M, L	Epinephrine / Alum 87
Gingibraid+	Dux Dental	Fine, S, M, L	Aluminum Potassium Sulfate
Gingibraid+	Dux Dental	Fine, S, M, L	Non- Impregnated
Gingknit	Dux Dental	Extra fine, fine, S, M, L, XL	Aluminum Potassium Sulfate
Gingknit	Dux Dental	Extra fine, fine, S, M, L, XL	Non- Impregnated
GingiGel	Dux Dental	S, M, L	20% buffered Aluminum Chloride
GingiCord	Dux Dental	S, M, L	Epinephrine / Alum 87
Unibraid +	Dux Dental	Fine, S, M	Epinephrine / Alum 87
Unibraid +	Dux Dental	Fine, S, M	Aluminum Potassium Sulfate
Z-Twist	GINGI-PAK	00, 1, 2, 3	dl- Epinephrine / Aluminum Sulfate
Gingi-Plain	GINGI-PAK	4-Ply, 2-Ply; Cord 1, 2, 3; Braid 000, 00, 1, 2, 3	Non-Impregnated
Soft Twist	GINGI-PAK	Cord 1, 2, 3	dl- Epinephrine
Hemodent Twisted Cords	Premier Dental Products Company	Med/Thin (9) and Med/ Heavy (3)	Non- Impregnated
Hemodent Braided Cords	Premier Dental Products Company	Thin, Med/Thin	Non- Impregnated
Oracord Knitted Retraction Cord	ProOptions	000, 00, 0, 1, 2, 3	Non-Impregnated
OraCord Epi Knitted Retraction Cord	ProOptions	00, 0, 1, 2	Epinephrine
Ultrapak	Ultradent Products, Inc.	000, 00, 0, 1, 2, 3	Non- Impregnated
Ultrapak E	Ultradent Products, Inc.	000, 00, 0, 1, 2, 3	Racemic Epinephrine Hydrochloride

II. Chemical Displacement: Hemostatic agents

Hemostatic agents can be utilized alone or used to medicate retraction cord. These chemicals have been shown to produce some combination of tissue shrinkage and/or hemostasis by control of leakage of oral fluids, precipitation of protein, blood coagulation, or shrinkage of blood vessels. The most common medicaments used are racemic epinephrine, aluminum sulfate, aluminum chloride, and ferric sulfate.

Properties and Adverse Effects

Aluminum Chloride: One of the most commonly used astringents. There are no contraindications and minimal side effects, although it can be caustic to gingival tissues at high concentrations.

Ferric Sulfate: Kinder to gingival tissues than aluminum chloride and provides excellent hemostasis. Not recommended for use with all-ceramic restorations in esthetic zone because gray discoloration may occur under restorations after cementation.

Aluminum Sulfate: Retraction capabilities but limited hemostasis achieved when compared to others in its class.

Epinephrine: Kindest to gingival tissue. Has shown systemic effects, such as tachycardia, increased respiratory rate, hypertension, and nervousness. Contraindicated in patients with history of cardiovascular disease, hyperthyroidism, and known hypersensitivity to epinephrine.

Clinical Tips for Hemostatic Agents

- Rinse teeth thoroughly after use of these chemicals as some of them can inhibit the setting reaction of addition silicone impression material.
- All astringents negatively affect the bond strength of adhesives to dentin. Scrubbing with a cavity cleanser before bonding can return the bond strength to normal values.



ViscoStat (Ultradent Products, Inc.)

Hemostatic Agents				
Product	Company	Active Ingredient/Composition	Material Type	Dispenser
Tissue Goo	Clinician's Choice	25% Aluminum Sulfate	Gel	Syringe
Hemodettes	DUX Dental	20% Buffered Alum Chloride	Gel	Unit Dose
Syptin	DUX Dental	20% Buffered Alum Chloride	Solution	Bottle
Hemogin-L	DUX Dental	25% Aluminum Chloride	Solution	Bottle/Dropper
Gingi-Aid	GINGI-PAK	25% Aluminum Chloride	Solution	Bottle
Orostat	GINGI-PAK	8% dl Epinephrine	Solution	Bottle
Stasis	GINGI-PAK	21% Ferric Sulfate	Solution	Bottle
Hemostasyl	Kerr Corporation	15% Aluminum Chloride	Gel	Syringe
Hemodent Liquid	Premier Dental	21.3% Aluminum Chloride	Solution	Bottle
FS Hemostatic	Premier Dental	15.5% Ferric Sulfate	Solution	Bottle/Dropper
Clear hemostatic Gel	ProOptions	25% Aluminum Chloride	Gel	Syringe
Hemostatic Gel	ProOptions	20% Ferric Sulfate	Gel	Syringe
Hemostatic Solution	ProOptions	15.5% Ferric Sulfate	Solution	Syringe
Rascetypine	Septodont	25% Aluminum Chloride w/ V oxyquim	Solution	Bottle/Dropper
Racegel	Septodont	25% Aluminum Chloride	Gel	Syringe
Astringedent	Ultradent Products	15.5% Ferric Sulfate	Solution	Syringe
Astringedent X	Ultradent Products	12.7% Iron Solution	Solution	Syringe
ViscoStat	Ultradent Products	20% Ferric Sulfate	Solution	Syringe
ViscoStat Clear	Ultradent Products	25% Aluminum Chloride	Solution	Syringe
HemCon	Zimmer	Lyophilized Chitosan Acetate Sponge	Sponge	Unit dose

III. Surgical Displacement: Lasers

Lasers can be used for a variety of soft- and hard-tissue procedures. Specifically, in areas of moderate to severe inflammation, the use of a soft tissue laser to create a “trough” around prepared teeth may be extremely effective in providing a clear, more accurate impression (traditional or digital). Soft tissue lasers include, Diodes, CO2, and Nd:Yag. Hard tissue lasers that have soft tissue capabilities include Er:YAG, Er, and CR:YSGG.

Much recent research on soft tissue lasers has been focused on diode lasers because they use an energy wavelength of 810-980 nm, a level that has shown a high affinity for soft tissue, making it comfortable for patients. Diode lasers have the ability to cut and coagulate at the same time, providing immediate hemostasis. They also vaporize tissue with little trauma, improving post-op healing and resulting in quicker recovery time. Gingival troughing before impression taking ensures an accurate impression.



Figure 5 Pre-operative inflamed tissue



Figure 6 Lasered tissue

Clinical Tips for Soft-tissue Lasers

- Gently scrub the tissue with hydrogen peroxide on a microbrush after using the laser to remove any tissue debris and clean the surface.
- Everyone present in the operatory should wear appropriate safety eyewear.
- Instruct patients to rinse with warm salt water several times a day and to start brushing gently around the treated site after a few days.



Odyssey Navigator (Ivoclar Vivadent)

Types of Lasers Found in Dentistry			
Laser	Wavelength	Absorption	Type
Diode	810-830 nm	Pigments	Soft
Diode	980 nm	Pigments	Soft
Nd: YAG	1064 nm	Pigments	Soft
Er: YSGG	2.79 μm	Portions of enamel	Hard
Er: YAG	2.94 μm	Portions of enamel	Hard
CO ₂	10.6 μm	H ₂ O, portions of enamel	Soft

Soft Tissue Management

Soft Tissue Lasers						
Product	Company	Laser Type	Treatment Wavelength	Power (W)	Pulse Energy	Storage
ezlase 940	BIOLASE	Diode	940 nm	4.5-7 W	na	Hand-held, Pole/wall-mounted, Tray stand
iLase Personal Diode Laser	BIOLASE	Diode	940 nm	5 W	na	Fully-portable, wireless
LaserSmile	BIOLASE	Diode	810 nm	10 W	na	Counter
Waterlase YSGG	BIOLASE	Er:YSGG	2780 nm	0.0-6 W	0-300 mJ	Floor
Waterlase YSGG MD	BIOLASE	Er:YSGG	2780 nm	0.0-8 W	0-300 mJ	Floor
HygieneLase	Discus Dental	Diode	810 nm	1 W CW, 1.7W Pulsed	10hz, 50Ms pulse duration	Counter
NV Microlaser	Discus Dental	Diode	810nm	2W	10hz, 50Ms pulse duration	Cordless hand-held
NV Ortho	Discus Dental	Diode	810nm	2W	10hz, 50Ms pulse duration	Cordless hand-held
OrthoLase	Discus Dental	Diode	810 nm	2 W	10hz, 50Ms pulse duration	Counter
SoftLase Pro	Discus Dental	Diode	810 nm	2 W	10hz, 50Ms pulse duration	Counter
InPulse	Incisive LLC	Nd:YAG	1064 nm	6 W	20-200 mJ	Floor
Odyssey 2.4G Diode Laser	Ivoclar Vivadent	Diode	810 nm	0-5 W	5-300 mJ	Counter
Odyssey Navigator	Ivoclar Vivadent	Diode	810 nm	0-3 W	5-150 mJ	Counter
GENTLEray 980 Laser	Kavo Dental	Diode	980nm	0-7W;12W Peak (GENTLEpulse mode)	na	Counter
LightWalker AT	Lares Research	Er:YAG; Nd:YAG	Er:YAG: 2940 nm; Nd:YAG: 1064 nm	Er:YAG: 20 W Max; Nd:YAG: 15 W Max	Er:YAG: 80-1500 mJ; Nd:YAG: 20-200 mJ	Floor
LightWalker DT	Lares Research	Er:YAG; Nd:YAG	Er:YAG: 2940 nm; Nd:YAG: 1064 nm	Er:YAG: 8 W Max; Nd:YAG: 8 W Max	na	Floor
LightWalker ST-E	Lares Research	Er:YAG	Er:YAG 2940 nm	Er:YAG: 8 W Max	Er:YAG: 80-1500 mJ	Floor
1064XLASE	Technology 4Medicine	Semi Conductor	1064 nm	10 watts, continuous, or micropulsing	Variable	Counter



Z-PRIME Plus + + + + 1/2

Bisco Dental Products
800.247.3368 - 847.534.6000
www.bisco.com

Description

Z-PRIME Plus is a single-component priming agent designed to enhance adhesion between indirect restorative materials and resin cements. It is used as a surface treatment for zirconia, alumina, metal/alloy, composite, endodontic posts, and intraoral repairs. **Z-PRIME Plus** is available in a 4 ml bottle with a technique card and instructions. It is compatible with light-cured and dual-cured resin luting cements. It has single-bottle delivery for ease of dispensing, and requires only air dry for ease of application. **Z-PRIME Plus** was evaluated by 29 consultants in 510 uses. It received a 91% clinical rating.

Suggested Retail Cost

- \$80.00/4 ml bottle

Product Features

Z-PRIME Plus is easy to use by simply applying it to the internal surface of a clean, dry restoration before loading the cement. Consultants liked the single bottle with no mixing and appreciated that no refrigeration was required. Compatibility with dual-cured resins was a positive feature. Like most priming agents, the solution has a strong odor. Forty percent of consultants reported that **Z-PRIME Plus** was better than their current primer and 50% reported that it was equivalent. Seventy-nine percent would switch to **Z-PRIME Plus** and 90% would recommend it.



Consultants' Comments

- “It was really easy to use - single bottle, no mixing - and coated very well.”
- “I did not have to refrigerate.”
- “Compatible with dual-cured resins and most surfaces.”

Clinical Tips

- Z-PRIME Plus** is a light-sensitive material. Once dispensed, use it immediately or protect from ambient light.
- Don't apply too much. Use warm air to dry.
- Cannot be used for silica-based restorations (traditional porcelain). ■

Sapphire Plus + + + +

Den-Mat Holdings LLC
800.433.6628
805.922.8491
www.denmat.com

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Visit www.dentaladvisor.com to request more information!



Description

Sapphire Plus is a high-intensity, multi-purpose light system used for initiating rapid polymerization of photo-initiated dental restoratives, for whitening, as an adjunct lesion detection aid (natural tissue direct fluorescence visualization system), and for soft tissue management. Specially designed filters are designed to provide peak performance for each use. Switches on the control panel have a wide range of timing increments and modes. The light source includes a control panel and digital display windows for mode and time; it also produces audio signals for additional confirmations. Light intensity may be tested with the radiometer on the front of the unit.

The **Sapphire Plus Curing Handpiece** includes an on/off trigger, time selection and time display. An orange light shield is removable. **Sapphire Plus** cures most composites in 3-5 seconds at depths to 10 mm. Multiple sizes of light guides are available. The standard size for routine use is 9 mm.

The **Sapphire Plus Whitening Crystal** is a curved attachment to provide light coverage across the entire arch. It may be used with the *Lumibrite Chairside Whitening System*, or any other light-activated gel. A floor stand with an arm for positioning the whitening crystal over the patient is also available. The default time for whitening is 60 minutes. Power output is adjustable for fewer teeth or sensitive teeth.

The **Sapphire Plus Lesion Detection** handpiece assists in detecting lesions, such as cancer and dysplasia, and allows for photo documentation. This attachment provides a light output of at least 75 Mw/cm². The user looks through the scope at the illuminated soft tissue, looking for altered appearance from normal. A digital camera attaches to the scope for photo documentation of the area in question.

The entire system includes the **Sapphire Plus** light source unit with power cord and two keys; **Sapphire Handpiece**; eye protection units with cases; light guide; orange light shield; composite test rings; user guide; lesion detection handpiece; lesion detection handpiece holder; lesion detection video; 100 barrier caps; 100 barrier sheaths; camera bag; *Canon* camera with strap; battery; battery charger; bayonette ring; cords; user guide; tabbed reference library on oral soft tissue diseases; patient brochures; expanding file; rolling stand with whitening arm and box; *Whitening Crystal*; five, *LUMIBrite Chairside Whitening kits*; and product literature. **Sapphire Plus** was used by 13 consultants for lesion detection (228 uses), light curing (219 uses) and tooth whitening (45 uses). It received an 86% clinical rating.

Suggested Retail Cost

- \$4995.00



Consultants' Comments

- “Very complete system - great for a single operator.”
- “I liked the lesion detection the best. I can easily take a photo of any findings.”
- “One of the best bleaching lights available.”
- “Easy to operate and easy to switch handpieces and tips.”
- “Sapphire Plus Lesion Detection System made the patient more aware that their cancer screening/lexam was taking place.”
- “It is cumbersome to move around, and the curing light is much more difficult to use than a cordless light.”
- “The holder for the lesion detection scope should be factory mounted to the light source; the adhesive mounting is not secure enough.”

Equipment Features

Sapphire Plus is a versatile piece of equipment that performs many functions. Because the light source is a relatively large, heavy unit, consultants agreed that it was best left in a single operator or placed on the wheeled base for portability. The light curing function performed well and cured composites quicker than the average hand-held light. The fiber-optic cable is long enough to reach from counter to patient, but it is cumbersome compared to smaller, cordless lights. The lesion detection feature of **Sapphire Plus** is a unique feature and a useful adjunct to traditional oral cancer screening methods. Positive patient feedback resulted from technology being used to promote “early detection.” **Sapphire Plus Whitening Crystal** is an easy and effective means of activating whitening gel. The unit has a sturdy arm that does not drift when holding the light over the patient. Thirty-eight percent of consultants reported that **Sapphire Plus** was better than their current method of lesion detection and 62% reported it was equivalent. Ninety-two percent of consultants reported that

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DenFil Flow + + + +

Vericom Co., Ltd.
+82-31-441-2881
www.vericom.co.kr

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Description

DenFil Flow is a light-cured, radiopaque flowable composite. It is indicated for Class I, III, IV and small posterior restorations, repair of small defects of indirect restoratives, undercut blockout, pit and fissure sealant, and repair of temporary filling material. **DenFil Flow** is available in 10 shades: A1, A2, A3, A3.5, B2, B3, C2, A2O, A3O and I. **DenFil Flow** is packaged in 2 g syringes which accept standard tips. Four-syringe kits with 20 tips or single syringe refills with 10 tips are available. Twenty-seven consultants used **DenFil Flow** in 774 uses. It received an 87% clinical rating.

Suggested Retail Cost

- \$69.99/Kit (4, 2 g syringes)
- \$20.99/Refill 1, 2 g syringe)

Product Features

Consultants reported that **DenFil Flow** was easy to use, bubble-free and radiopaque. The cured composite was a good match to the Vita shade designation. The material is fairly viscous and stacks well. Many consultants liked this viscosity, whereas others preferred a higher or lower viscosity flowable composite for some applications. Additional viscosities are available from this manufacturer. Twenty-six percent of consultants reported that **DenFil Flow** was better than the flowable composite they were using, while 56% said it was equivalent. Sixty-three percent of consultants reported that they would switch to **DenFil Flow** and 85% would recommend it. ■



Consultants' Comments

- “No oozing, bubble-free, excellent control.”
- “Viscosity/handling was very good - fewer bubbles, easier handling than some other flowables I have used.”
- “Radiopacity was quite acceptable- one of the better qualities.”
- “Great color match and gloss!”
- “Stacks well; although thick, it adapts well to cavity preparations.”
- “Good flow characteristics, can be manipulated but also stays where placed.”
- “A little thick for my liking.”
- “Make tips larger for easier extrusion of material.”

Sapphire Plus + + + +

continued from page 8

Sapphire Plus Whitening Crystal was better than or equivalent to their current whitening light. Thirty-eight percent of consultants reported that **Sapphire Plus** was better than or equivalent to their current light-curing unit. Forty-two percent would switch to **Sapphire Plus** and 77% would recommend it.

Clinical Tip

- Test cure materials before use on patients. **Sapphire Plus** does not cure all materials, such as some glass ionomer restoratives.
- Sapphire Plus Lesion Detection System** should be used along

with conventional oral mucosal examination with incandescent (white) light. Patients with a history of photosensitivity or those using photosensitive medications should not be exposed to the light emitted from the system.

- Turn operatory lights off while doing lesion screening.
- Editors' Note:** The soft tissue management function of **Sapphire Plus** was not evaluated. ■

Sparkle Propy Paste + + + +

Crosstex
888.276.7783
631.582.6777
www.crosstex.com

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Visit www.dentaladvisor.com to request
a sample or more information!



Description

The *Sparkle Propy Paste* product line consists of *Sparkle Propy Paste with Fluoride* (1.23% fluoride ion) and *Sparkle FREE Propy Paste*. Both formulations contain Xylitol and are gluten free. *Sparkle FREE* is also free of dyes and fluoride. *Sparkle Propy Paste* is formulated to eliminate spatter and to rinse away easily. It is indicated for application during standard cleaning and polishing dental hygiene procedures. *Sparkle Propy Paste with Fluoride* is available in seven flavors (BerryLicious - Blueberry, Raspberry, Strawberry Assortment/Bubble Gum/Cherry/Mint/Orange Vanilla) and three grits (coarse, medium and fine – bubble gum only). *Sparkle FREE Propy Paste* is formulated with Titanium Oxide. Titanium Oxide creates the whiteness of the propy paste in the absence of any dyes, leaves a slight whitening residue on teeth so you can easily identify which teeth have been cleaned. Titanium Oxide also creates a fine polishing agent which coupled with the abrasive pumice creates an excellent cleaning and polishing system. *Sparkle FREE* is available in four flavors (Cinnamon/Fruity/Spearmint/White Chocolate) and two grits (coarse, medium). *Sparkle Propy Paste with Fluoride* and *Sparkle FREE Propy Paste* are packaged in 200-count boxes of individually sealed, single-use cups. Consultants evaluated *Sparkle Propy Paste with Fluoride* (BerryLicious in coarse and medium grits), *Sparkle FREE Propy Paste* (Spearmint in coarse and medium grits), and a sample pack with an assortment of all flavors and grits. *Sparkle Propy Paste with Fluoride* and *Sparkle FREE Propy Paste* were used by 34 consultants in over 2800 polishing procedures. It received an 86% clinical rating.

Suggested Retail Cost
• \$34.95/200-count box

Product Features

The outstanding feature of *Sparkle Propy Paste with Fluoride* and *Sparkle FREE Propy Paste* is the lack of spatter during polishing. The finer texture of *Sparkle FREE Propy Paste* was described by some consultants as “chalky,” which helped it stay on the teeth. Rinsing the paste completely off of the teeth was easy with *Sparkle Propy Paste with Fluoride* leaving no residual grit; however, it was more difficult with *Sparkle FREE Propy Paste* due to the Titanium Oxide, often leaving a white residue at cervical areas and in occlusal grooves – requiring more rinsing. Consultants found the quality of stain removal to be very good with both *Sparkle Propy Paste with Fluoride* and *Sparkle FREE Propy Paste*. Patients liked the selection of flavors. Thirty-five percent of consultants reported that *Sparkle Propy Paste with Fluoride* and



Consultants' Comments

- ♦ “I liked the choices of different flavors, they taste and smell great.”
- ♦ “Removed stain well with low spatter.”
- ♦ “Sparkle FREE paste was harder to rinse off than other products.”
- ♦ “Make the package easier to open.”

Sparkle FREE Propy Paste were better than their current paste and 41% found these to be equivalent. Sixty-two percent would switch to *Sparkle Propy Paste with Fluoride* and/or *Sparkle FREE Propy Paste* and 74% would recommend them.

Clinical Tips

- Use medium grit for normal cleaning, polishing and plaque removal; use coarse for heavy stain and plaque removal and enamel polishing.
- Avoid the coarse grit on composites and porcelain restorations.
- Use the fine grit for children and on composites. ■



ScanX Classic + + + +

Air Techniques
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www.airtechniques.com

Description

ScanX Classic (model PN B7200) is a digital radiography system that utilizes reusable Phosphor Storage Plates (PSP) in place of film to produce diagnostic quality intraoral and extraoral digital radiographs. *ScanX* eliminates chemicals, film processors and maintenance associated with film processors. The *ScanX Classic* produces a digital image by scanning PSPs that have been exposed to x-ray. Images are digitally stored utilizing user-supplied software and computer making the retrieval and display of radiographic images at the touch of a button. *ScanX Classic* works with existing x-ray equipment to capture an image and also incorporates *In-Line Erase* and *Intelligent Track Control* technologies. *In-Line Erase* is a feature that erases and prepares Phosphor Plates for reuse immediately after the plate is read by the system. The *Intelligent Track Control* is convenient for practices with multiple operatories. *ScanX Classic* has 4 processing slots that can be used simultaneously. When paired with *Visix Imaging Software*, images are captured and directed to the proper patient records in the appropriate operatory for immediate review by the dentist with the patient. *ScanX Classic* supports the conversion of traditional panoramic and cephalometric x-ray machines to digital by replacing the film with a PSP of the same size. *ScanX Classic* also accepts intraoral PSP's in sizes 0, 1, 2, 3, and 4. The equipment operates in normal room lighting, is wireless, and requires virtually no change in technique when taking the radiograph. The package includes: *ScanX Classic*, power supply, power cord, computer connector cable, plate transfer box, 20 size 2 PSPs, operator's manual, instructions, drivers, and utilities. *ScanX Classic* with size 2 plates was evaluated by seven consultants over a period of six months in 2293 uses. It received a 98% rating.

Suggested Retail Cost

- \$21,995

Equipment Features

Consultants who evaluated *ScanX Classic* found the system easy to integrate into the office routine and a vast improvement over developing film. The size 2 PSPs were easy to place in patients' mouths and produced clear images. Loading plates into the *ScanX* was simple, and the images were available promptly. One of the favorite features of the system is the ability to eliminate the chemicals involved with film processing. The versatility of this unit to accept all sizes of intraoral and extraoral plates makes it useful for any dental office. One hundred percent of consultants reported that *ScanX Classic* was better than their current x-ray system and they would both recommend and switch to *ScanX Classic*.



Consultants' Comments

- ♦ “I liked the speed of developing films.”
- ♦ “Clarity of images was great.”
- ♦ “I used less chemicals.”
- ♦ “Films sometimes had blemishes.”
- ♦ “Training program would be helpful.”

Clinical Tips

- Be sure to utilize the PSP barrier envelope to protect the plate and ensure proper hygiene.
- After exposing the plate, protect the sensitive side from light until it is scanned. This can be accomplished by utilizing the supplied Plate Transfer Box.
- Minimum computer system requirements necessary to operate the *ScanX Classic* include Windows 2000 Pro 32-bit with Service Pack 4, or Windows XP Pro 32-bit with Service Pack 2, or Windows 7 Pro 32-bit; USB 1.1 or later; CPU- 2.8 GHz Pentium IV; RAM 1 GB; Hard Drive-120 GB; Video Display adapter -32 MB; Monitor - 1024 x 768 or higher; CD ROM Drive; standard keyboard and mouse; backup device; external surge protector; power supply backup; and image management software. ■

CLEARFIL SA CEMENT and CLEARFIL CERAMIC PRIMER
1-year Clinical Performance + + + + +

Kuraray America
800.879.1676
www.kuraraydental.com

Description

CLEARFIL SA CEMENT is a self-etching, self-adhesive, dual-cured resin cement with fluoride release. It is based on the *Panavia* and *CLEARFIL SE BOND* adhesive technology and has a reported film thickness of approximately 20 microns. It is indicated for cementation of crowns and bridges made of metal or ceramic as well as inlays/onlays and metal and fiber posts. It is packaged in 4.6-ml syringes in Universal (A2) and White shades and is dispensed directly from an automix syringe or using a specially designed dispenser.

CLEARFIL CERAMIC PRIMER is a single-bottle silane/acidic adhesive monomer (MDP)-based coupling agent for use with indirect porcelain, ceramic, hybrid ceramic and composite restorations. It may also be used for intraoral porcelain or composite repairs. **CLEARFIL CERAMIC PRIMER** is reported to bond to any kind of dental ceramic, including feldspathic porcelain, zirconia, alumina, lithium disilicate and leucite-reinforced ceramics. No hydrofluoric acid etching is necessary for ceramics before using this product. A phosphoric acid etchant may be used to treat the intaglio surface of any restoration other than zirconia or alumina. Instructions recommend a single coat followed by air-drying. **CLEARFIL CERAMIC PRIMER** contains an ethanol-based solvent and requires refrigeration but should be brought to room temperature before use. This product combination received a 98% clinical rating.

The purpose of this study was to determine the long-term clinical performance of a self-adhesive resin cement when used with a ceramic primer for cementation of all-ceramic restorations. THE DENTAL ADVISOR evaluated performance at placement, six-months and one-year.

Clinical Evaluation Protocol

- A total of 272 restorations (approximately 50% zirconia and 50% lithium disilicate) were cemented with **CLEARFIL SA CEMENT** and **CLEARFIL CERAMIC PRIMER**. Restorations included: 136 zirconia-based restorations, 128 lithium disilicate restorations, 6 leucite-reinforced restorations, and 2 ceramic-metal restorations.
- Restorations were placed on 237 posterior and 35 anterior teeth (Figure 1).
- One hundred ninety-six all-ceramic restorations, cemented with **CLEARFIL SA CEMENT** and **CLEARFIL CERAMIC PRIMER**, were recalled at 6-months and one-year.

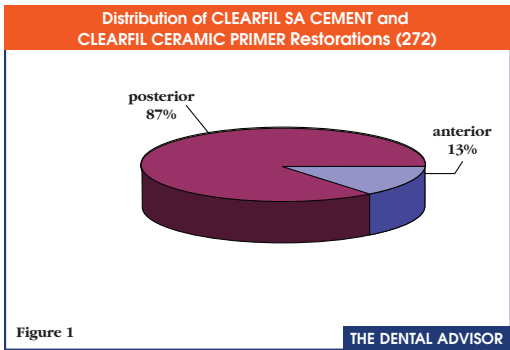


Consultants' Comments

- ◆ "There was little sensitivity experienced by my patients."
- ◆ "This cement was easy to dispense and required no anesthetic at placement. It is a perfect system to have in my office."
- ◆ "I have seen no marginal staining at one year on any of the restorations I cemented. That gives me confidence in the bond strength."
- ◆ "Applying the ceramic primer was easy and it may ensure a better bond over the lifetime of the crown."

Patients' Comments

- ◆ "No problems with my crown. It feels great."
- ◆ "I had a little sensitivity for a few weeks when it was initially cemented. My teeth are just more sensitive. It feels great now."
- ◆ "The outside of my crown chipped but the inside was cemented so strongly that the doctor had to cut the whole thing off."



Clinical Observations

Results at Placement

Handling of cement and ease of clean up of excess
CLEARFIL SA CEMENT received an excellent rating for ease of removal of excess after placement (Figure 2).

CLEARFIL SA CEMENT and CLEARFIL CERAMIC PRIMER
1-year Clinical Performance + + + + +

Fit of restoration

All restorations cemented with **CLEARFIL SA CEMENT** and **CLEARFIL CERAMIC PRIMER** had excellent marginal fit. The contacts and occlusion were ideal before cementation.

Shade match/esthetics

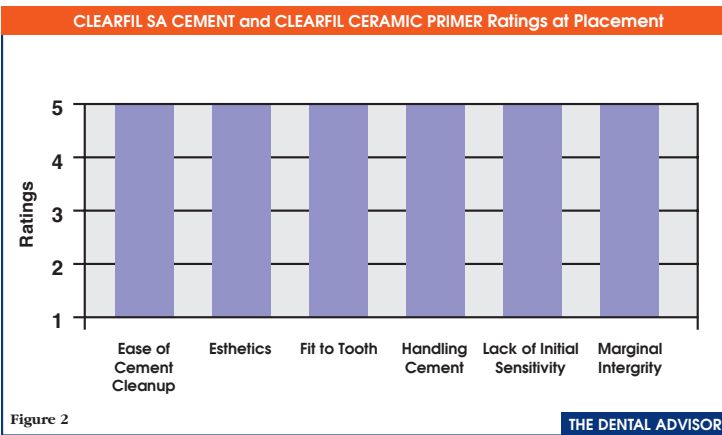
The optimal esthetics of the restorations was maintained after cementing the restorations with **CLEARFIL SA CEMENT**.

Marginal integrity

The viscosity of the cement allowed passive cementation of the restorations resulting in preservation of the ideal marginal fit of the restorations.

Initial sensitivity

The majority of the teeth exhibited no sensitivity after cementation of the restorations.



Notes on CLEARFIL CERAMIC PRIMER

- **CLEARFIL CERAMIC PRIMER** was applied to the internal surface of the lithium disilicate and leucite-reinforced restorations.
- Metal primers were applied to the internal surface of ceramic-metal restorations.
- Zirconia restorations were not primed.
- **CLEARFIL CERAMIC PRIMER** was easy to apply.
- **CLEARFIL CERAMIC PRIMER** thoroughly wet the internal surface of restorations.

Results at Six Months

Bonding

One of the restorations debonded at six months.

Lack of sensitivity

Few patients reported any sensitivity.

Resistance to marginal staining

No marginal staining was reported at six months.

Resistance to fracture/chipping

No fracture or chipping was noted.

Esthetics

The shade of **CLEARFIL SA CEMENT** blended well with the restoration at placement. No shade shift was noted at six months (Figure 3).

Results at One Year

Bonding

Four restorations debonded at one year and required recementation.

Lack of sensitivity

Very few patients reported sensitivity. A small number of patients experienced mild sensitivity lasting 2-4 weeks. Two crowns had to be removed as a result of prolonged significant sensitivity.

Resistance to marginal staining

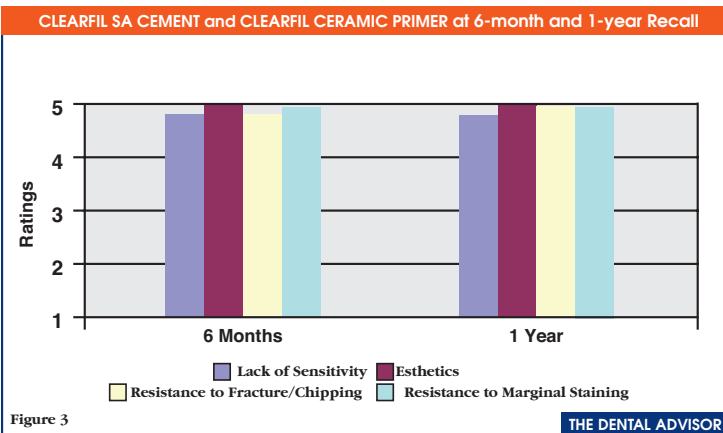
No marginal staining was observed at 1 year. One restoration had to be remade due to poor marginal fit.

Resistance to fracture/chipping

One restoration fractured at one year and had to be removed and remade.

Esthetics

The shade of **CLEARFIL SA CEMENT** blended well with the restoration at placement. No shade shift was noted at one year (Figure 3).



Summary

One hundred ninety-six all-ceramic restorations, cemented with **CLEARFIL SA CEMENT** and **CLEARFIL CERAMIC PRIMER**, were recalled at six-months and one-year. All received excellent ratings for esthetics, resistance to marginal staining, lack of sensitivity, and resistance to fracture/chipping at both six months and one year. ■

ShortCut All-in-One Retraction Cord Delivery + + + + ½

DUX Dental
800.833.8267 • 805.488.1122
www.duxdental.com

Description

Short Cut is a disposable retraction cord dispenser and cutter. When the dial on the front of the device is turned in the direction of the arrow, a click is heard, and approximately 10 mm (0.4 inches) of cord is dispensed. Once the desired amount of cord is dispensed, a squeeze on the dispenser activates the cutting blade. **Short Cut** is available pre-loaded with 6 feet of *GingiBRAID+* cord in sizes 0, 1 and 2. Clinicians may choose non-impregnated cord, cord with epinephrine or cord with aluminum potassium sulfate. **Short Cut** was evaluated by 13 consultants in 271 uses. It received a 93% rating.

Suggested Retail Cost
• \$18.99 per **ShortCut**

Clinical Observations

Packaging and Manufacturer's Instructions
Consultants rated packaging as excellent and manufacturer's instructions as very good. The packaging is compact. Some consultants would like to see the dispenser reloadable.

Ease of Dispensing Cord/Ease of Dialing Wheel
Consultants rated the ease of dispensing as excellent and the ease of dialing wheel as very good. Consultants reported no issues with the cord getting tangled; however, if one does not pay attention to the arrows on the wheel, it is possible to accidentally turn it the wrong direction, losing the end of the cord inside the device.

Amount of Cord Dispensed
Any amount of cord can be dispensed. Although the wheel dial clicks for a set amount, it is not necessary to make the cut at that point. Users have the option to pull the cord out to any desired length and bypass the dial.

Ease of Cutting Cord
Consultants who evaluated **Short Cut** loaded with a very thin retraction cord rated the ease of cutting cord as good. Those who chose a heavier cord (#2) found the cutter to be slightly more difficult to squeeze.

Convenience/Durability of Dispenser
Consultants rated convenience of the dispenser as very good and durability as acceptable for a disposable product. The cutter becomes dull and less effective with repeated use.

Ease of Disinfection
Consultants generally wiped the device with a disinfectant wipe



Consultants' Comments

- ♦ "Innovative dispensing and cutting! I wonder why somebody didn't think of this before!"
- ♦ "The cord never gets tangled!"
- ♦ "I would like to see a reloadable dispenser that I can load with my own cord."
- ♦ "Easy to disinfect - eliminates cross-contamination."
- ♦ "Fill the dispenser with more cord to make it a better value."
- ♦ "Make the cutter sharper."

after use. Since the cord remains inside of the dispenser, the potential for cross contamination of the cord is minimized.

Summary

While consultants thought the **Short Cut** dispenser was innovative, they would prefer different cord options. Sixty-nine percent of consultants reported that **Short Cut** dispenser was better than their current cord dispenser and 15% reported it was equivalent. Fifty-four percent would switch to **Short Cut** and 92% would recommend it to a colleague.

Clinical Tip

- When using cord #2 or thicker, hold cord taut for easier cutting.
- Editors' Note:** The cutter was observed to develop rust on the surface after a few uses. According to the manufacturer, the blade is now stainless steel making it resistant to rust and corrosion. ■



KaVo Dental
888.528.6872 • 847.550.6800
www.kavousa.com

Description

The **COMFORTdrive**® **200XDR** is a lightweight, high-speed electric handpiece featuring patented micro-motor technology. It is designed for precision cutting and quieter operation with superior ergonomics. **COMFORTdrive** has a no-bur-stall feature to improve efficiency in gross reductions and crown and bridge preparations. The handpiece features an integrated sterilizable motor that delivers 30 watts of constant power for consistent performance. The integrated motor reduces the distal area length after the pivot point in the doctor's hand allowing for comfort and control. The **COMFORTdrive** operates at 55 dB. The **COMFORTdrive** system features Plug-n-Prep auto-calibration technology for easy setup that does not require adjustment to any other equipment in the office. Once calibrated, the **COMFORTdrive** system allows for an air-like feathering effect between 30,000-200,000 rpm with the foot pedal. The system is designed so that doctors using air-driven handpieces can seamlessly transition to **COMFORTdrive** with no learning curve. According to the manufacturer, the **COMFORTdrive** is 40% lighter and 15% shorter than traditional electric handpieces, has 30 watts of constant power, has quiet operation at 55dB, and has 50% more feathering capability ranging from 30k to 200k rpm. The system contains: one **COMFORTdrive 200XDR** handpiece (with integrated Micro-motor), and one **COMFORTtronic 4894 Control Module**, tubing with **COMFORTbase** coupling, power supply unit with power cord, spray nozzle, lamp changer, operator's manual, laminated quick start guide, and product literature. **COMFORTdrive** was evaluated by nine consultants in 428 uses. It received a 98% rating.



Consultants' Comments

- ♦ "This is an absolutely great handpiece. It is the smoothest, quietest handpiece I have ever used."
- ♦ "Lightweight with nice fiber optics."
- ♦ "High torque. Handpiece never stalls."

Suggested Retail Cost
• \$4999/Full Operatory Setup features three handpieces and one control module
• \$2999/Single handpiece with single control module

Equipment Features

Consultants unanimously reported that **COMFORTdrive** was lightweight. With the power of an electric handpiece and the size and feel of an air-driven handpiece, **COMFORTdrive** provides the dentist with an ideal cutting instrument. Operation is extremely smooth, and all users rated it as the quietest handpiece they had ever used. The auto chuck worked flawlessly, holding the bur without slipping. The light is bright, and quality of air/water spray is excellent. **COMFORTdrive** is only available with a full-size head since smaller heads can generate greater heat and noise. Fifty-six percent of consultants reported that **COMFORTdrive** was better than their current handpiece, whereas 44% reported it was equivalent. Seventy-eight percent would switch to **COMFORTdrive** and 100% would recommend it. ■

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Whip Mix Corp
800.626.5651 - 502.637.1451
www.whipmix.com

Description

Green Envy Tray Cleaner is a dental impression tray cleaner indicated for the removal of alginate and gypsum from impression trays. **Green Envy** is pH neutral to clean trays without scraping, corrosion or harmful chemicals. It is biodegradable, environmentally friendly and gentle on skin. **Green Envy** dissolves alginate and plaster residue by interacting with soils and surfaces, breaking down the microorganisms. One scoop of powder is dissolved in two cups of water, and trays should soak for at least 15 minutes. It is packaged in a 2.2 lb jar (cleans about 500 trays) and has a light citrus aroma. **Green Envy Tray Cleaner** was used by 26 consultants in 790 uses. It received a 96% clinical rating.

Suggested Retail Cost

- \$40.00

Product Features

The light citrus scent, as well as the neutral pH and non-toxic nature of **Green Envy** made it pleasant to use. Consultants reported that **Green Envy** produced the best results when trays were allowed to soak for 20 to 60 minutes; this was somewhat faster than their current tray cleaners. Seventy-seven percent of consultants reported that **Green Envy Tray Cleaner** was better than their current tray cleaner and 19% reported it was equivalent. Ninety-two percent would switch to **Green Envy Tray Cleaner** and 96% would recommend it. ■



Consultants' Comments

- ◆ *"Works well, pleasant scent and environmentally friendly."*
- ◆ *"Dissolves alginate quickly - less time needed to scrub trays."*
- ◆ *"My assistant, who has been in dentistry for 30+ years, thought this was the best tray cleaner she had ever used."*
- ◆ *"Provide a stronger concentration so less is needed for larger holding tanks."*
- ◆ *"Improve instructions for mixing larger volumes of solution."*

SPECIAL THANKS TO:

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