

DENTAL ADVISOR™

Product insights you can trust.

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Clinical Problem Solvers



MI Paste® ONE Perio
GC America Inc.



**PANAVIA™ SA
Cement Universal**
Kuraray Noritake



Biodentine XP
Septodont



NoGag™
Orion Innovations, Inc.



**QuickConnect
Anatomy Band**
Rhodium



Vittra APS Unique
FGM Dental Group



G-aenial™ A'CHORD
GC America Inc.



Super Fiber Post®
iLumi Sciences, Inc.



GC Fuji® Automix LC
GC America Inc.



In this month's issue, we visit the concept of Clinical Problem Solvers; identifying products that solve a particular clinical challenge. We reach out to our evaluators regularly for them to identify products that really fill a clinical need and are there when needed for those problems that can sometimes seem insurmountable! Typically, dentists and their teams have limited time to solve the challenge presented in the operator, so we are pleased to help in the selection of products that truly solve a particular clinical problem. We offer these product solutions for you to consider the next time a problem presents itself.

I hope you find these suggestions useful, and please continue to send in your recommendations! As always, you may reach me at drbunek@dentaladvisor.com or to our team at connect@dentaladvisor.com. Thank you for reading!

— *Sabiha S. Bunek*

OUR CLINICAL PROBLEM SOLVER EVALUATORS



Dr. Matthew Miller

Dr. Miller graduated with high distinction from the NYU College of Dentistry and is the recipient of the American Academy for Aesthetic Dentistry Award, as well as the Northeastern Society of Periodontics Award. He consults and lectures on 3D Imaging Technologies and Advanced Restorative Techniques and maintains a private practice in Huntersville, NC.



Dr. Ona Erdt

Dr. Erdt obtained her DMD as well as completed an MSHS degree, majoring in Health Professions Education, from Western University of Health Sciences in Pomona, CA. She practiced dentistry with Indian Health for a number of years and is now Clinical Editor at DENTAL ADVISOR. She maintains a private practice in St. Johns, Michigan.



Dr. Marc Harrison Lai

Dr. Lai is a graduate of the University of The Pacific Dugoni School of Dentistry and the renowned Kois Center in Seattle, WA. Dr. Lai currently serves as an Alumni Board of Director at the Dugoni School of Dentistry and serves as Director of the Kois Study Group of Northern California. He maintains a private practice in San Francisco, CA.



Dr. Ashton Prince

Dr. Prince is a graduate of the School of Dental Medicine, University of Nevada, Las Vegas. He served as an Associate Professor with the University where he supervised and taught Restorative and Cosmetic Practices. Dr. Prince is a founding member of the Seattle Study Club of Southern Utah.



PANAVIA™ SA Cement Universal

Kuraray Noritake, www.kuraray.us.com Clinician: Dr. Marc Harrison Lai



Photos courtesy of Dr. Marc Harrison Lai

Panavia SA Cement Universal can be used on any substrate without a bonding agent.

PROBLEM:

With so many different restorative materials available on the market today, dentist and dental assistants alike can often feel overwhelmed when having to select the correct material for the cementation of indirect restorations. Even more complicating is selecting a cement that is not only compatible with the particular indirect restorative material, but also following the respective surface preparation protocols. All these factors can lead to frustration, confusion and ultimately poor clinical outcomes due to user error.

SOLUTION:

With **PANAVIA SA Cement Universal**, cementation protocols are significantly simplified. The material contains both the Original MDP adhesive monomer and Kuraray Noritake's proprietary LCsi silane technology allowing cementation of all types of indirect restorative materials without the need for additional primers and surface preparation agents. It's self adhesive resin properties combined with the MDP adhesive monomer also provide strong bonds to both enamel and dentin. Lastly, the cement allows for easy and efficient cleanup and its dual cure properties ensure full setting. Therefore, using **PANAVIA SA Cement Universal** reduces the need for multiple materials and steps, thus greatly simplifying cementation workflows while creating more efficient and effective clinical outcomes.



GC Fuji® Automix LC

GC America, Inc., www.gcamerica.com Clinician: Dr. Matthew Miller

PROBLEM:

Dentists understand the great benefits of using glass ionomer restoratives, but their offices often lack a triturator which is needed to mix the capsules.



SOLUTION:

GC Fuji® Automix LC provides a cartridge-based resin reinforced, glass ionomer cement with an automix dispenser. Material is easily extruded directly into the tooth using an ergonomically designed gun, with no need for a triturator. **GC Fuji Automix LC** is a bioactive material with rechargeable, high fluoride release. There is no need to etch or bond, which results in less clinical chair time. High bond strengths are achievable even in the presence of saliva. The small filler particles allow for an easy polish, and result in an esthetic restoration.





Vittra APS Unique

FGM Dental Group, www.fgmdentalgroup.com Clinician: Dr. Ashton Prince

PROBLEM:

In the pursuit of a true “Chameleon Effect” composite, dentists still struggle to find for a material that will truly blend with the surrounding tooth structure, especially when there are variances in color throughout the tooth. Too often dentists use a blending composite that will appear too translucent or needs to have a dentin or blocking shade material placed at the base to assist in the color transition.



SOLUTION:

Vittra APS Unique provides that blocking-out ability without having to stock a base material in your office. Use it in your anterior cosmetic cases or use it in your posterior bulking cases. Due to Advanced Polymerization System (APS) technology, working time is extended. This material truly is “Unique” in that it will minimize your material stocking as it is one shade adapting to all shades, and will give you a color blend you can be confident in.



Photos courtesy of Dr. Ashton Prince



MI Paste® ONE Perio

GC America, Inc., www.gcamerica.com Clinician: Lesley Correll, B.A., B.S., R.D.H.



Photos courtesy of Lesley Correll

PROBLEM:

Adolescent (12 years plus) orthodontic patients are at a higher risk of decalcification/caries and gingival inflammation due to poor oral hygiene compliance.

SOLUTION:

MI Paste® ONE Perio is a 2-in-1 dentifrice that can help treat and prevent both decalcification/caries and gingivitis. This “one and done” approach simplifies oral hygiene and promotes compliance by removing the need for several products. **MI Paste® ONE Perio** has a mild minty taste and is gentle with a low RDA (Relative Dentin Abrasivity) value.



*Allergy alert: This product contains milk protein

iLumi Super Fiber Posts

iLumi, www.iLumiSi.com Clinician: Dr. Matthew Miller

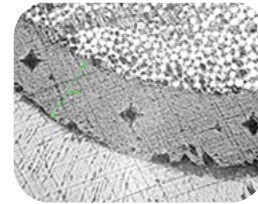
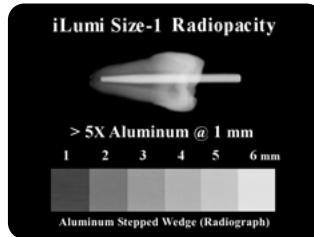
PROBLEM:

Blue light emitted from a curing light has limited penetration and transmission through fiber posts leading to reduced bond strengths and cement hardness, especially in the apical region of the root.

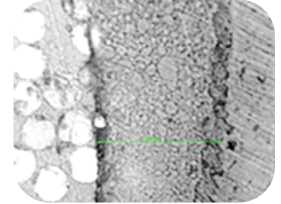
SOLUTION:

iLumi Super Fiber Posts allow for greater blue light penetration and transmission completely through the apical region. An independent test evaluating the light penetration and subsequent cement hardness was compared between **iLumi Super Fiber Post #3**, **Coltene ParaPost Taper Lux Size 6**, and **3M RelyX Fiber Post 3D Size 2** post systems. The posts were bonded into place using **FuturaBond U** (VOCO) and a light cured only cement (**Variolink Esthetic LC**, Ivoclar) and cured using the **3M Elipar Deep Cure-S** curing light. The results showed that all the posts had similar bond strengths in each segment of the root. However, the **iLumi Super Fiber Post** had the greatest light transmission resulting in increased polymerization efficiency and hardness of the resin cement in the most apical region, as measured on the Vickers microhardness scale.

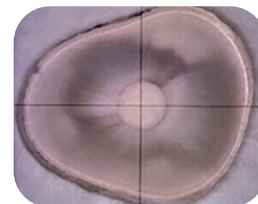
iLumi Super Fiber Posts provide a more complete cure and hardness of the resin cement throughout the entire root because of their enhanced light transmission. Even if using a dual-curing resin cement when placing a post, it is widely documented that light polymerization increases the overall bond strength of the restoration; therefore, having a post that can efficiently transmit blue light is important. The **iLumi Super Fiber Posts** are 5.55 X the radiopacity of dentin and are precisely matched with their respective drills which gives them an accurate fit as well.



Example of hardness indentation, at 100X magnification.



Example of **iLumi Super Fiber Post** cement layer at 400X magnification.



Coronal Tooth Specimen before debonding.



Example of cement debonding from dentin, **ParaPost Taper Lux** apical segment.



NoGag™

Orion Innovations Inc., nogag.com • orioninnovationsgroup.com Clinician: Dr. Sabiha Bunek

PROBLEM:

Most dental professionals have experienced patients with a strong gag reflex. Taking a posterior periapical x-ray, a VPS impression or a digital scan may often trigger a patient's gag reflex, resulting in a poor or inaccurate outcome. Additionally, patients may avoid certain treatments because of gagging.



Photos courtesy of Dr. Sabiha Bunek



SOLUTION:

NoGag provides a very simple solution in just 10 seconds! **NoGag** helps eliminate the gag reflex for one hour by simply sprinkling the powder on the anterior 1/3 of the tongue prior to the procedure. **NoGag** is non-numbing, and according to the manufacturer, has no contraindications, no age restrictions, and no allergens. The best part is that it features a mild salty flavor that dissipates quickly.



G-aenial™ A'CHORD

GC America, Inc., www.gcamerica.com Clinician: Dr. Ona Erdt

PROBLEM:

Selecting a shade for complex shaded restorations can be costly and difficult, having to increase inventory to prepare for cases of any kind.

Solution:

G-aenial A'CHORD offers 5 simplified shades instead of 16 shades, making color selection quick and easy. The simplified shade aspect makes it possible to still create natural, beautiful restorations for patients while only having to carry five core shades in the office, minimizing inventory significantly from having to carry 16 shades to cover the entire VITA spectrum. The **G-aenial A'CHORD** system makes layering for highly esthetic restorations easy and more predictable.



Caries removal and long bevel placed



Second layer placed with opaque shade A02



Final restoration

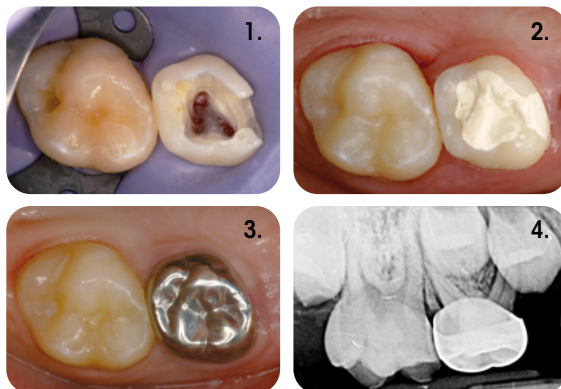


Biodentine XP

Septodont, www.Septodontusa.com Clinician: Dr. Lucile Goupy, France

PROBLEM:

Patient presented with large area of decay on tooth #a. Pulp exposure during caries curettage necessitated a cervical pulpotomy. **Biodentine XP** was bulk-filled from the pulp chamber to the occlusal surface and then capped with a stainless steel crown. An x-ray follow-up at 3 months showing the absence of any peridicular lesion.



Photos courtesy of Dr. Lucile Goupy, France

SOLUTION:

Biodentine XP is an excellent bioactive restorative material. It can be directly placed in the tooth using the ergonomically-designed gun and capsules. In this case, **Biodentine XP** successfully sealed the tooth and provided a stable, bioactive foundation for the stainless steel crown in this pediatric case.





Quick Connect Anatomy Band

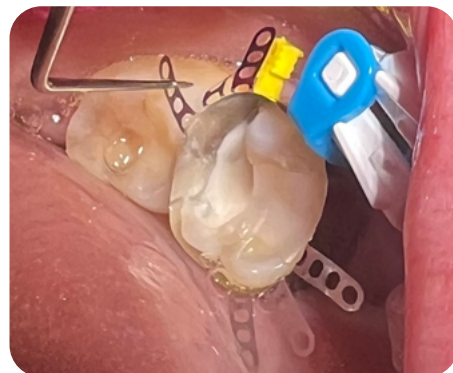
Rhondium LTD, www.rhondium.com Clinician: Dr. Ashton Prince

PROBLEM:

Large multi-surface composite restorations often present significant clinical challenges, particularly when cusps are missing and/or there is little remaining tooth structure. Further, many traditional circumferential matrix bands offer little or no contour, create poor anatomy, are not bi-lateral, and pull away from the adjacent teeth leaving open contacts. They can often be difficult or impossible to tighten, allowing the matrix to fall off or leave ledges on the margins of the restoration. Other matrix bands require fingers in the back of the mouth to tighten or have bulking retainer mechanisms that get in the way.

SOLUTION:

The **QuickConnect Anatomy Band** offers a unique solution to the clinical challenges in large multi-surface composite restorations. The detachable stainless carrier provides easy placement and does not interfere with the procedure and the bands have a swivel so that they can be used in any quadrant. The tightened band clings securely to teeth, even with minimal structure, without twisting, whilst maintaining the correct tooth shape. The optional "Tight-Contact-Tabs" ensure tight and/or wide contacts through a pulling rather than pushing action. Thus, the QuickConnect Anatomy Band significantly enhances restoration efficiency and accuracy and fulfils a need that has been missing for a long time.



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39 CLINICAL EVALUATORS

929 TOTAL USES

93% CLINICAL RATING

Key features: Universal polisher for ceramics and composite • Two steps
• Autoclavable • Spiral shape easily adapts to all surfaces of the restoration

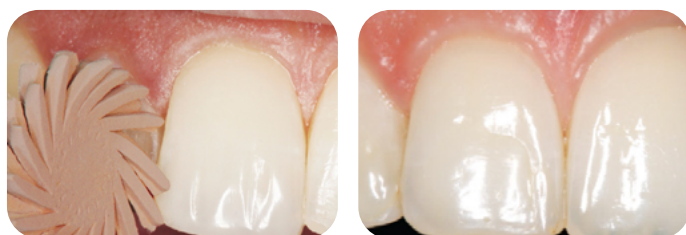
Description

Diamond-impregnated **A.S.A.P.® All Surface Access Polishers** provide a high shine and life-like vitality to all composite restorations without the need for polishing paste.

- The **A.S.A.P. Pre-polisher** is embedded with 44-micron diamond particles to gently diminish small surface defects and prepare the surface for a final high gloss polish.
- The **A.S.A.P. Final High Shine Polisher** is embedded with 3- to 6-micron diamond particles to provide a life-like polish.
- Designed for efficiency, **A.S.A.P. Polishers** are universally effective on composite, lithium disilicate, bisacryls, most ceramics, and zirconia.
- Autoclavable for use up to 30 times.

Indications

- Recommended for polishing of all composite surfaces.
- Universal polisher can also be used on lithium disilicate, bisacryls, most ceramics, and zirconia.



Dentistry and photography courtesy of Danièle Larose, DMD, AAACD



Clinical Tips

- Use with water as directed.
- Use clockwise motion when polishing, as indicated; it makes a difference.
- Pay attention to your RPM, using a slower speed with light pressure and let the polisher do the work.

"I LOVE THAT THEY CAN POLISH ANY SUBSTRATE."

Evaluators' Comments

"Really gets into the grooves well. Gives a fantastic smooth surface and high shine."

"The circular shape allows access to every area, not true with other polishers."

"These work well even after autoclaving. Very durable."

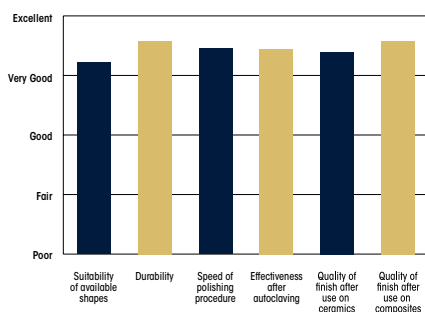
"Would be nice to have different shapes and have only one step."

95% Consultants who would:
Recommend to a colleague

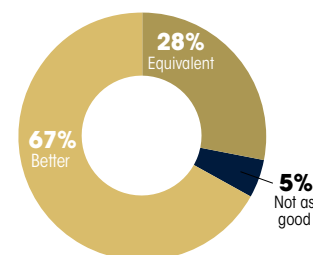
33% Consultants who would
want to stock in office:
Yes, instead of current product

59% Yes, in addition to current product

Evaluation Summary:



Compared to Competitive Products:





27 CLINICAL EVALUATORS

660 TOTAL USES

86% CLINICAL RATING

Key features: Universal bonding agent (light-cured) • Compatible with all etching modes • Multiple Indications

Description

HugeBond Universal is a light-cured, single-component universal bonding agent which is:

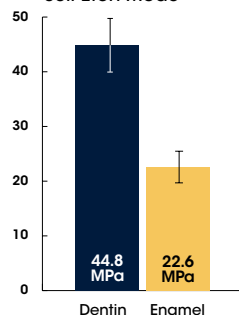
- Used in self-etch, total-etch and selective-etch procedures
- Compatible with light-cured, dual-cured, and self-cured cements
- Reliable for bonding direct and indirect restorations
- Formulated with MDP monomer that enhances chemical adhesion to direct and indirect restorations such as dentin, enamel, composite, metal, and zirconia



Indications

- Direct restorative procedures
- Indirect restorative procedures
- As a primer for indirect restorations
- Repair of ceramic, composites, or metal restorations
- Desensitizer

DENTAL ADVISOR Biomaterials Test Results: Shear Bond Strength Self-Etch Mode



Clinical Tip

- Use a small amount of air when thinning out the first coat.



"EASY TO USE WITH MANY INDICATIONS."

Evaluators' Comments

"The ability to use a single bonding material for all styles and types of composites is very nice."

"The viscosity was thicker than most agents. I felt I had great coverage."

"The bottle design made it easy to get the amount you needed. Some bottle designs dispense more than what you need or want."

"Great consistency and clinical usability"

"Film thickness is very high."

"Material is light sensitive - be sure to cover before and during use."

Consultants who would:

88% Recommend to a colleague

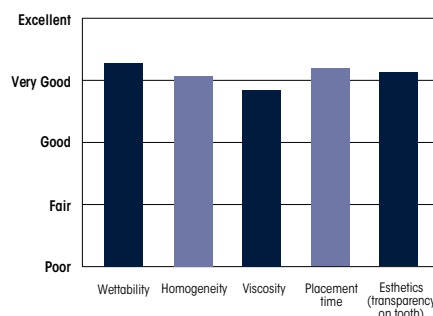
Consultants who would want to stock in office:

4% Yes, instead of current product

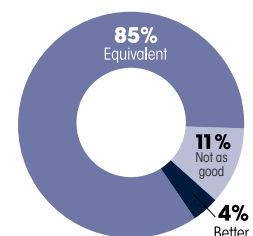
62% Yes, in addition to current product

19% I might want to order this product for certain cases

Evaluation Summary:



Compared to Competitive Products:





23 CLINICAL EVALUATORS

215 TOTAL USES

88% CLINICAL RATING

Key features: Fast-Setting VPS Impression Material • High Detail
• Color Contrast

Description

PERFIT is a polyvinylsiloxane impression material which is:

- **Available in 4 viscosities:**
Heavy, Regular, Light, and Putty
- **Fast setting:** sets in
3 minutes intraorally

Indication

PERFIT impression materials are used to make final impressions for all indirect restorative procedures, including:

- crown
- bridge
- inlays and onlays
- implantology
- orthodontics
- removable appliances



Clinical Tip

- Keep field as dry as possible. Be sure light body covers tooth with no air bubbles or gaps.
- The light body works really well for a denture reline impression material.

"GREAT DETAIL AND HANDLING. EXCELLENT HYDROPHILIC PROPERTY."

Evaluators' Comments

"The ease of loading and consistency of this impression material are very good."

"No voids, light body is more runny and goes easy to the required area to be captured."

"The color of the light body made it easy to read margin details."

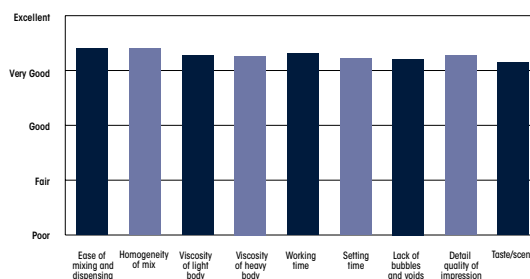
"I loved the set-up time!"

"I prefer a brighter color of light body."

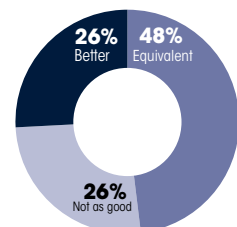
"Even though this was fast set, I would like a faster set."

"Label cartridges with set time."

Evaluation Summary:



Compared to Competitive Products:



78% Consultants who would:
Recommend to a colleague

43% Consultants who would
want to stock in office:
Yes, instead of current product

Powder Free Silk Blue Latex Dental Dam

Sanctuary Health www.sanctuary-dental.com

dentaladvisor.com

RATING SYSTEM: Excellent + + + + + Very Good + + + + Good + + +



21 CLINICAL EVALUATORS

247 TOTAL USES

86% CLINICAL RATING

Key features: Powder Free-Latex Dental Dam • Low Protein • Mint scent

Description

Powder Free Silk Blue Latex Dental Dam is a dental dam with:

- No powder
- A blue color to reduce eye fatigue
- Medium thickness
- Low protein

Indications

- Endodontic procedures
- Restorative procedures requiring isolation

Unique Attribute

- Mint scent and flavor



Clinical Tips

- Punch holes closer together so it is easier to floss through contacts.
- This dam came in handy especially in cases of malocclusion or excessive crowding of teeth where adaptability of the dam was imperative.

"HIGH QUALITY DENTAL DAM."

Evaluators' Comments

"The adaptation to the tooth was by far the most superior I have seen."

"Excellent tear resistance."

"The color and scent was nice."

"Would have been great if it was latex free and preframed".

"Thicker than what I use; Offer in other thicknesses."

Consultants who would:

86% Recommend to a colleague

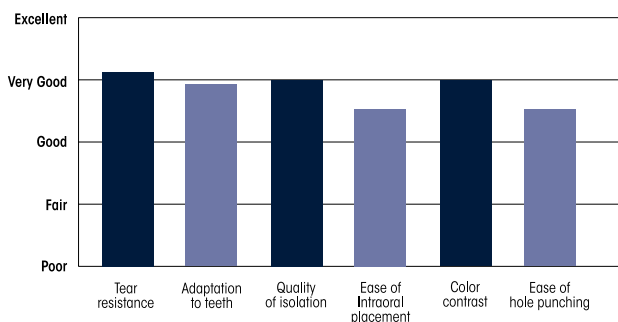
Consultants who would want to stock in office:

10% Yes, instead of current product

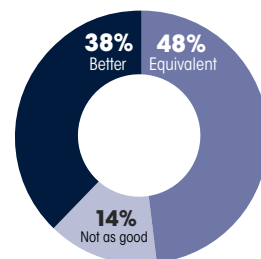
57% Yes, in addition to current product

14% I might want to order this product for certain cases

Evaluation Summary:



Compared to Competitive Products:





6 CLINICAL EVALUATORS

274 TOTAL USES

91% CLINICAL RATING

Key features: Wireless Intra-Oral Sensor, • High Resolution
• Direct Conversion

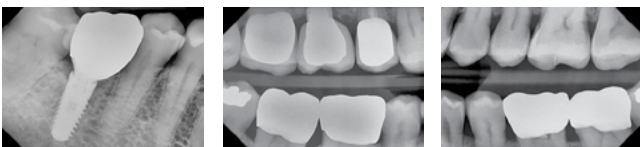
Description

DC-Air is:

- A Wireless Intra-Oral Sensor
- Powered by Bluetooth technology
- Directly converted; it translates x-rays into an electronic signal for increased sharpness and resolution
- Constructed with direct silicon (Si) semiconductor substrate which provides durability by eliminating the glass fiber optic and scintillation layers in conventional sensors

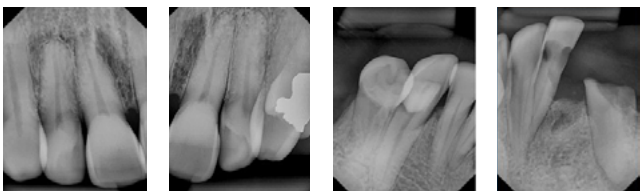
Indication

- All intra-oral dental radiography indications, including horizontal and vertical bitewings, individual peri-apical and occlusal films



Radiograph images courtesy of Dr. John Hamerink and Bunek Dental Studio

The rounded edges of the sensor allow for easier access to capturing images of the mesial or distal aspects of the mouth.



Radiograph images courtesy of Dr. John Hamerink

The DC-Air Wireless Sensor offers an anterior holder, posterior holder, occlusal sheath, and a specialty endodontic positioning device for hard-to-get images.



Clinical Tips

- We found that the small sleeves used for covering the bite stick on our digital pan/CBCT are perfectly sized to cover the sensor.
- Have the patient close slightly for posterior x-rays.
- Be sure to check the energy emitted; our cordless Nomad had to be increased in strength to improve the image.
- Have the patient bite down halfway and slowly for posterior PAs to get a better angle.
- You can use other brand sensor holders.

"NO CORDS,
GREAT QUALITY
IMAGING."

Evaluators' Comments

"The signal for the Bluetooth is really strong!"

"The image quality is very good."

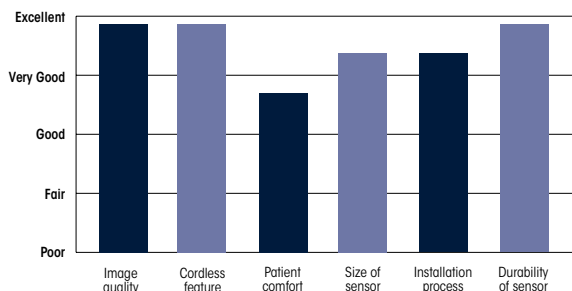
"Very durable construction."

"Wireless just makes things easier."

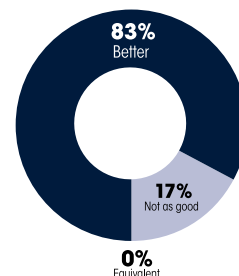
"The support we received was excellent."

"Change the size of some of the sensor holders to accommodate different sized mouths."

Evaluation Summary:



Compared to Competitive Products:



Consultants who would:
100% Recommend to a colleague

Consultants who would
want to stock in office:
67% Yes, instead of current product



7 CLINICAL EVALUATORS

55 TOTAL USES

91% CLINICAL RATING

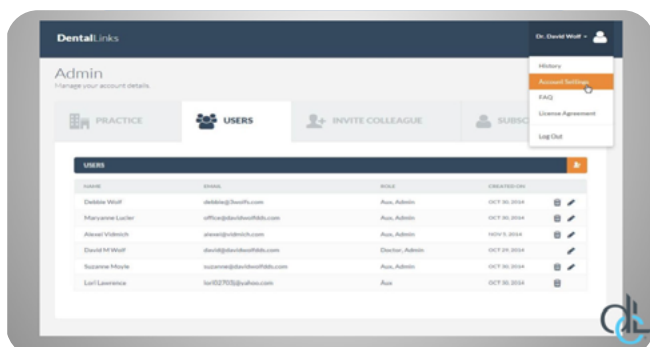
Key features: HIPAA Compliant • Cloud-Based-Referral System

Description

Dental Care Links is a cloud-based, referral software program designed to simplify the process of referring patients to specialists. It uses a HIPAA compliant interface to send messages and images. This platform helps solve the problems with current referral management such as lost paper referrals, insecurity of standard email, inability to open encrypted emails and provides a shared online patient record to improve two way communication.

Indication

- Any dental office needing a referral platform to correspond with specialists and to general dentists.



"EASY TO UPLOAD PHOTOGRAPHS AND RADIOGRAPHS."

Evaluators' Comments

"This program provides detail and ease of receipt for cases to my specialist."

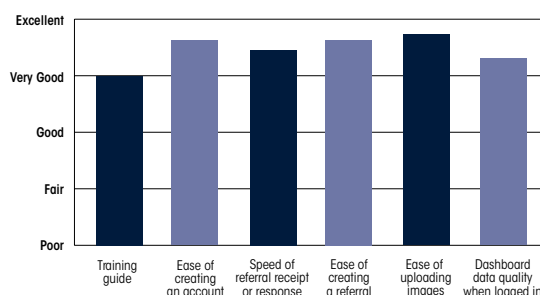
"All referrals are easily tracked and stored in one place."

"Very easy to use; referrals are all in one area on the dashboard."

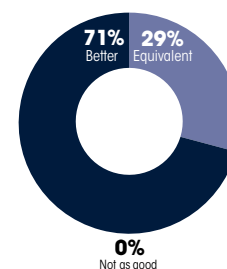
"Live chat would be a nice feature."

"I had a bit of trouble knowing where I was at in the dialog between providers - maybe a date stamp would help."

Evaluation Summary:



Compared to Competitive Products:



57% Consultants who would:
Recommend to a colleague

43% Consultants who would
want to stock in office:

14% Yes, instead of current product
14% Yes, in addition to current product



29 CLINICAL EVALUATORS

950 TOTAL USES

88% CLINICAL RATING

Key features: Syringe delivery • Hydrogel wound dressing
• All natural ingredients • Dry socket prevention

Description

Orasoothe "Sockit" Gel is:

- All-natural wound dressing
- Used to optimize healing
- Used for pain management
- Used for dry socket prevention

Indications

Apply after:

- Extractions
- Scaling and Root Planing
- Implants
- Bone grafting procedures
- Periodontal disease
- Periodontal Flap surgery
- Laser treatment
- Prophy (patients who complain about sensitivity after prophy)
- Any type of oral lesion such as aphthous ulcers or sore spots on dentures, orthodontic lesions



What did you use Orasoothe "Sockit" Gel for?

- Extraction Sites 97%
- Oral Lesions 39%
- Aphthous Ulcers 32%
- Denture Sores..... 32%
- Orthodontics..... 7%



Clinical Tips

- Place syringe close to site and lightly extrude the syringe.
- Due to its many uses, don't be afraid to use it in any clinical situation where you think there might be discomfort or a need for healing.

"SO EASY TO USE AND NON-TOXIC INGREDIENTS."

Evaluators' Comments

"Excellent all-natural healing product."

"My patients with lichen planus found relief with this gel and it is non-steroidal."

"Great patient reviews. Some came back wanting to buy it."

"Application was very easy and the results for pain relief were great."

"Nice to be able to give the patient the syringe post-operatively and that it is easy to apply."

"Taste could be improved; maybe add flavor to the gel."

Consultants who would:

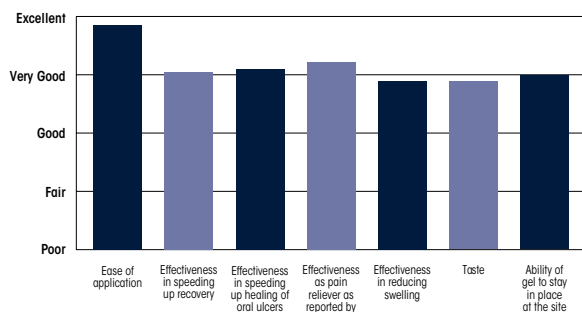
89% Recommend to a colleague

Consultants who would want to stock in office:

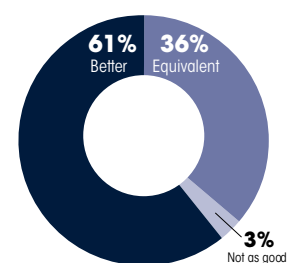
39% Yes, instead of current product

39% Yes, in addition to current product

Evaluation Summary:



Compared to Competitive Products:



Capsule Waste Evaluation for Restorative Materials

Introduction:

As anthropogenic global climate warming races on, environmentally conscious manufacturers seek ways to reduce the Global Warming Potential (GWP) in the production of the materials necessary for dental procedures. A recent study that examined the environmental impacts of dental restoratives found that over 95% of the GWP in terms of kg CO₂ produced for glass ionomer cements (GIC) was largely accounted for in the process for creating the packaging for the restoratives¹. It also found that GIC had the smallest overall GWP between the categories of amalgam, resin-based composites and resin-based adhesives highlighting the sustainability of this class of restorative materials.

Given the urgent nature of the challenges facing the planet, this study focused on the sustainability of the dental packaging design of capsule-based restoratives which are mixed using a triturator. We also examined the amount of usable restorative that can be applied from the capsule after mixing compared to what is originally packaged to give an idea of the efficiency of the packaging system. This study should highlight areas in which manufacturers can improve their packaging designs for a more sustainable dental industry.

MATERIALS:

EQUIA Forte HT Fil A2 (GC America), **Ketac Universal Aplicap A2** (3M), **Surefil one A2** (Dentsply Sirona), **Cention Forte A2** (Ivoclar), **RIVA Self-Cure HV A2** (SDI)

Test Methods:

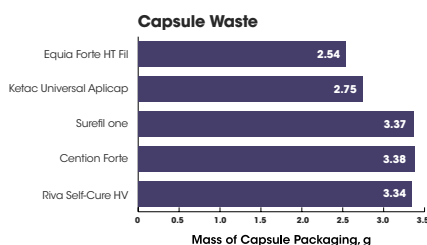
Capsule Packaging Content Measurement (n=5): Capsules were weighed in the initial condition before being sectioned with a slow-speed diamond wafering saw and thoroughly cleaned of material (powder and liquid) by rinsing with water and application of a brush, and multiple rinses with ethanol before drying with an air syringe and placed in a 40°C oven to dry for at least 30 minutes before mass measurement. Additional measurement and sectioning of cleaned specimens was conducted to determine the amount of packaging material lost in the sectioning process and the average value was added to the measurements of the packaging content values.

Useable Restorative Material Application Measurement (n=5): Capsules were weighed in the initial condition using a calibrated analytical scale (Fisher Scientific accuSeries 224), and material was fully applied according to manufacturer instructions and the extruded cement was weighed to determine the mass of material that can be applied per capsule.

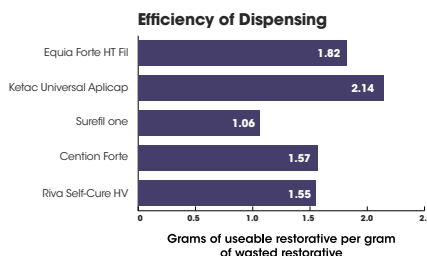
Total Restorative Material Measurement (n=5): The difference in the initial capsule mass and the mass of the capsule packaging content determined the value for how much total restorative material was initially contained in each capsule.

Wasted Restorative Material Measurement (n=5): The difference in the calculated Total Restorative Material contained in each capsule was subtracted from the mass of the average extruded or Useable Restorative Material to determine how much restorative material is unused after full application, primarily inside the tip of the capsule.

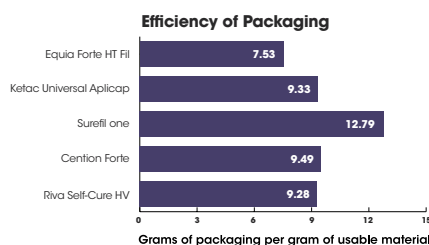
Results:



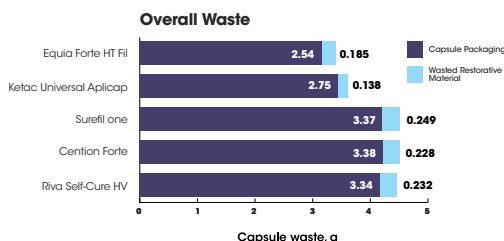
Equia Forte HT Fil has the least plastic waste in the package of the tested capsules. This was identified as the single most important factor for global warming impact.



While **3M Ketac Universal Aplicap** has the highest ratio of usable restorative compared to wasted restorative, it also applies the 2nd lowest amount of restorative at 0.29g, with **Surefil one** applying 0.26g, and **Equia Forte HT Fil** applying 0.34g.



In a comparison of the ratio of packaging waste to how much material is applied, **Equia Forte HT Fil** has the most efficient packaging, which has only 7.5 grams of packaging for every gram of restorative material.



While, the global warming impact study indicated that the packaging waste was the greatest concern, this shows the relatively low amount of wasted restorative material in proportion to the capsule packaging waste.

Conclusion:

Equia Forte HT Fil capsule packaging has less total mass than the other products tested while wasting the least amount of packaging per gram of usable restorative, making it the most efficient packaging design.

REFERENCES:

¹Smith L, Ali M, Agrissais M, Mulligan S, Koh L, Martin N. A comparative life cycle assessment of dental restorative materials. *Dent Mater.* 2023;39(1):13-24. doi:10.1016/j.dental.2022.11.007

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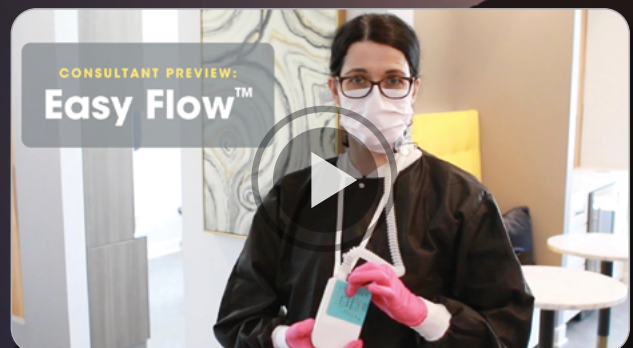
Motion Graphic Video



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