



## BruxZir and e.maxCAD: Superior Clinical Performance at 3+ Years

**Gordon's Clinical Bottom Line:** The TRAC research section of CR has been conducting a controlled clinical study of monolithic restorations for 3-1/2 years. These restorations are serving far better than anticipated. *This report contains an update on the well-documented positive TRAC Research results.*



Scanning electron microscope (SEM), clinical, and laboratory examinations are showing **equally excellent service for BruxZir and e.maxCAD** milled full-contour crowns on molars at 41 months of service in a practice-based controlled clinical study. **This service record exceeds that of over 100 other tooth-colored materials studied by TRAC over the past 39 years using the same methods.** The superior performance of these two products has commanded our close attention. Literally millions of these two products have now been placed by U.S. dentists over the past five years—tipping dominance away from the time-honored PFM. Yet clinical research has lagged far behind clinical use, leaving important questions unanswered.

**This report provides follow-up on the one-year data published in the June 2012 Clinicians Report to update clinicians as answers begin to develop to the critical clinical questions listed on page 2.**



*Continued on page 2*

## Should Digital Impressions Be Part of Your Practice?

**Gordon's Clinical Bottom Line:** The intraoral digital scanner concept is moving into the profession extremely rapidly. Numerous systems are now available, with many more in development. Scanned impressions for crowns and fixed prostheses have been shown in previous CR studies to be more accurate than conventional impressions, and dental laboratories are offering lower fees for restorations made from digital impressions. CR scientists and clinical Evaluators have studied five of the latest systems. *This article will help you to decide if scanning is for your practice.*

CAD/CAM (computer-aided design/computer-aided manufacturing) has caused a fundamental change in dental lab production. Digital scans of preparations, conventional impressions, and stone models are now manipulated on-screen instead of by hand. Intraoral impression scanners have always been an essential element of in-office CAD/CAM systems such as CEREC (Sirona) and E4D Dentist (E4D). Stand-alone scanners, iTero (Cadent) and Lava COS (3M ESPE), were among the first successful systems capturing just the digital impression to be sent to a lab (see Nov 2007 CRA Newsletter and Apr 2010 Clinicians Report). The superior accuracy and fit of CAD/CAM restorations has been well documented in numerous studies. Many dental labs now offer discounted fees (as much as 20%) for digital cases. Digital impressions do not completely replace conventional impressions at this time, but they are the tool of choice in many cases and continue to gain in popularity because of the following recent advances:

- Increased interest and competition are bringing down costs
- Smaller laptop-based systems eliminate cart in operatory
- Live display of 3D image provides instant feedback on quality of prep and scan
- Applying contrast powder to teeth has been reduced or eliminated
- Data files have "open-architecture" and can be uploaded by any digitally equipped dental lab
- Smaller handpieces are easier to use with better intraoral access
- New restorative materials designed for CAM show exciting potential

**The following study provides an overview of five systems, CR survey data on scanner use, information on digital workflow, clinical tips, and CR conclusions.**

*Continued on page 3*



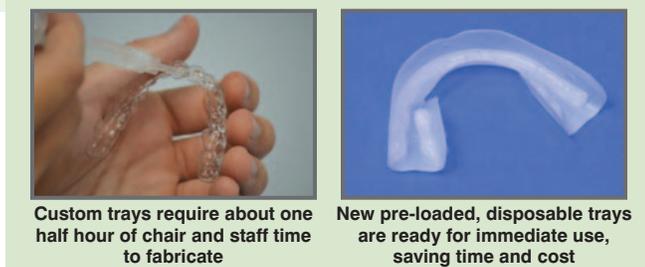
## New Concepts In Tooth Whitening Will Grow Your Practice!

**Gordon's Clinical Bottom Line:** Whitening teeth provides a simple and impressive way to influence patients into elective esthetic procedures. CR (CRA) has been a pioneer in tooth whitening research for several decades—what's new? At-home whitening is more popular than in-office whitening. Accommodating this are new trends which include pre-fabricated, pre-loaded trays that simplify the procedure; new chemical formulations that better control sensitivity; and increased affordability.

Tooth whitening is the most frequently requested esthetic dental procedure and often leads to further treatment, including veneers, orthodontics, tooth-colored composites, and crowns. At-home and in-office whitening products have numerous treatment options to meet the expectations of patients, but all utilize the same fundamental chemistry: hydrogen peroxide breaks down into oxygen radicals which destroy stain molecules in the teeth.

**The following report summarizes current trends and techniques in tooth whitening.**

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*Products Rated Highly by Evaluators in CR Clinical Trials on page 6*

# BruxZir and e.maxCAD: Superior Clinical Performance at 3+ Years *(continued from page 1)*

## Critical Clinical Questions and Answers Beginning to Develop after 3+ Years of Service

### 1. Does BruxZir zirconia severely wear opposing dentition?

NO, see chart below. Concern that zirconia would severely wear opposing dentition dictated our locating and measuring all facets on test crowns and all types of opposing dentition. Three-year data below show **BruxZir zirconia crowns caused 23% less wear of opposing dentition than the pressed ceramic-over-zirconia Control (PressCeram by Swiss NF over zirconia by Metoxit) and about the same wear as e.maxCAD lithium disilicate processed with an experimental 12.5-minute post-mill procedure. BruxZir received more wear than it caused.**

**Table 1: Percent area worn by the Test Crowns and the Opposing Dentition**

Brands names of materials studied	% area worn by Test Crowns on Opposing Dentition			% area worn by Opposing Dentition on Test Crowns		
	Year 1	Year 2	Year 3	Year 1	Year 2	Year 3
BruxZir	5.5 *	10.3 *	12.8 *	8.2 *	14.5 *	29.6 *
e.maxCAD (27 min. post-mill processing)	6.7	10.8	17.9	4.6	7.3	11.1
e.maxCAD (12.5 min. post-mill processing)	4.7	7.9	11.3	6.1	9.4	13.4
Pressed ceramic-over-zirconia (Control)	10.9	14.2	16.6	8.2	11.1	16.4

\* Data apply only to BruxZir zirconia. Other zirconia formulations may perform differently.

### 2. Does BruxZir zirconia lack of flexibility adversely affect the occlusal system?

Some people predicted tooth mobility, mastication muscle strain, and joint disfunction. None of the predicted problems have been noted to date in this study. If you have experienced any of these problems with BruxZir, please contact by email [rella@tracresearch.org](mailto:rella@tracresearch.org).

### 3. Do full-zirconia dental restorations undergo phase change in the 100% humidity of the oral cavity?

To date, phase change problems such as surface cratering and microcracks have not been noted by SEM, nor have particles released into soft tissues with resulting inflammatory changes been seen in this study. However, more time is needed to eliminate this question. In 2001, some zirconia hip joint implants showed these changes occurring within months to beyond five years of clinical use. BruxZir was released commercially in summer 2009, so these are critical years regarding this question. Other more recently released dental zirconias will require similar long-term monitoring.

### 4. If e.max lithium disilicate is performing so well, why consider use of BruxZir full-zirconia?

There are no data to indicate BruxZir and e.maxCAD could not serve equally well in all *single-unit* situations. Empirically, both dentists and lab technicians have preferred to take advantage of e.max lithium disilicate's beauty for anterior teeth and BruxZir's high strength for the following:

- When minimal tooth preparation can be used.

*This study shows BruxZir meeting its claims by serving well with less than 1.0 mm occlusal reduction and near-feather edge margins on molars, even in patients with bruxing/clenching habits. e.maxCAD was not tested with minimal reduction preparations because these claims were not made for this product.*

- In areas that force shallow preps due to limited space.
- For labs, anytime the preps are too shallow to allow predictable positive clinical results with other materials.

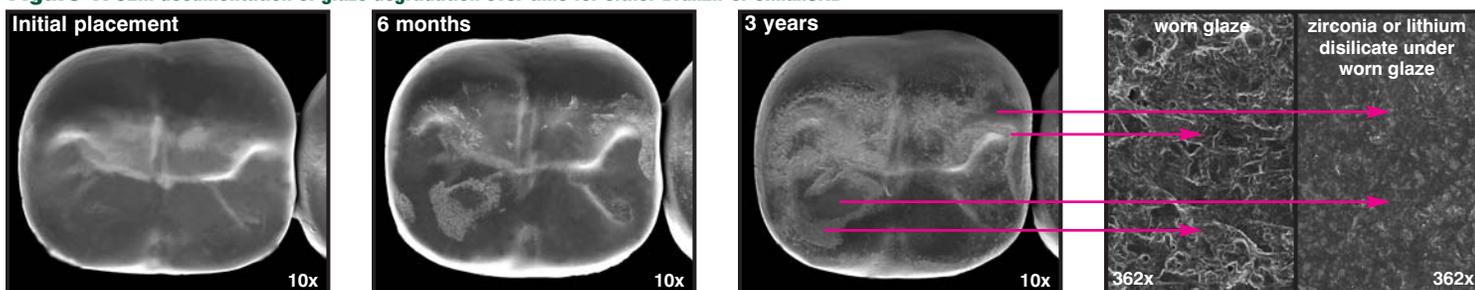
**Table 2: BruxZir and e.maxCAD are the antithesis of one another in many characteristics.**

Differences		Similarities	
<b>BruxZir</b>		<b>BOTH BruxZir and e.maxCAD</b>	
• Very high flexural strength (1000+ MPa)	<b>V</b>	• Lower flexural strength (about 350 MPa)	• Time consuming to remove, and removal risks prep gouging
• Adequate and improving esthetics	<b>E</b>	• Excellent esthetics	
• Minimal prep permissible	<b>R</b>	• Deeper prep preferable	• Glaze degrades at occlusal contacts, but the unglazed materials function well in occlusion
• Moderately worn by opposing dentition	<b>S</b>	• Moderately wears opposing dentition	
• Very long post-mill processing (8.5 hours)	<b>U</b>	• Shorter post-mill processing (12.5 to 27 min)	• Currently, more time consuming for labs to polish than to glaze
• Mills smoothly at margins	<b>S</b>	• Milling causes many small chips at margins	
• Cannot acid etch, can sandblast gently		• Acid etches well, must not sandblast	

### 5. Should BruxZir and e.maxCAD be final polished or glazed?

*After only six months, it was evident the glazes would not last long.* By three years, 54% of the glaze applied on occlusal surfaces in this study was no longer present (31% removed by dentists for occlusal adjustment and 23% removed by use). Glaze is used because it is faster than polishing, leaves surfaces very smooth, and preserves characterization stains. However, the clinical degradation and resulting gross surface roughness negates all these points. Options are to improve the glazes or develop easy polishing techniques and internal characterization of blocks.

**Figure 1: SEM documentation of glaze degradation over time for either BruxZir or e.maxCAD**



A. Very smooth surface finish on glaze initially. B. Glaze loss and roughening after only 6 months of service. C. Severe glaze roughening and loss exposing underlying material at 3 years. D. Magnification shows glaze roughness compared to underlying smooth material.

# BruxZir and IPS e.maxCAD: Superior Clinical Performance at 3+ Years *(continued from page 2)*

## Critical Clinical Questions and Answers Beginning to Develop after 3+ Years of Service *(continued)*

### 6. What are the best instruments for occlusal adjustment?

February 2013 *Clinicians Report* gave detailed analyses of 16 products, naming **Luster (Meisinger)** and **OptraFine (Ivoclar Vivadent)** as CR Choices.

### 7. Is TRAC's experimental 12.5-min. post-mill processing procedure for e.max the same, better, or worse than the original 27-min. procedure?

The two procedures were statistically the same in 18 variables monitored, but crowns treated using the experimental 12.5 minute method showed numerically less wear of opposing dentition.

### 8. Does endo entry access compromise BruxZir and e.maxCAD restorations?

YES. October 2012 *Clinicians Report* gave detailed information on best instruments and techniques, and concluded with the necessity to **use new diamonds, light pressure, and copious water coolant with 1mm or more of occlusal material thickness.**

### 9. What are the best products and techniques for removal of BruxZir and e.maxCAD crowns?

**New fine-grit, round-ended taper diamonds used with water coolant, light touch, and frequent examination to avoid gouging underlying dentin works best.** Additionally, Polaris Crown Cutting Wheel (*Pollard Dental Products*) is preferred by some clinicians, but requires attention during use to avoid unintended cutting.

### 10. What is the best cementation technique for BruxZir and e.maxCAD?

See below and page 4. Steps and best products are different for zirconia vs. lithium disilicate.

### 11. Can zirconia have the translucency and colors available now with lithium disilicate?

Translucency and colors of zirconia are improving, but currently lithium disilicate is superior in these characteristics. However, BruxZir esthetics can be adequate (see Figure 2, 30 full-crown BruxZir case at right).

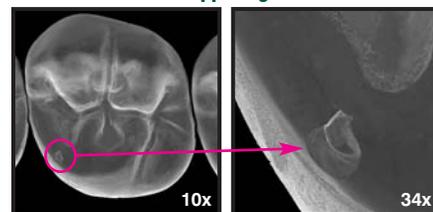
### 12. What is the expected service life and failure mode of BruxZir and e.maxCAD?

No one knows. The first and only chip in this study occurred on BruxZir at one year and has not progressed (see Figure 3 at right). More time is needed to answer this question. **Current exceptional service justifies hope for exceptional longevity.**

**Figure 2: Full-mouth restoration with BruxZir in a heavy bruxing male**



**Figure 3: Small, non-progressing chip in a BruxZir crown opposing BruxZir**



## TRAC Conclusions:

**BruxZir** and **e.maxCAD** full-contour crowns on molars have demonstrated clinical service superior to all other tooth-colored materials studied clinically by TRAC over 39 years. To date, their service record resembles that of cast metal. Clinical service over three plus years has begun to answer many critical clinical questions, but important questions remain on possibility of phase change of zirconia in 100% humidity of the oral cavity, glaze use, service life, and failure mode. Status reports will be forthcoming as answers to these and other pertinent questions emerge through this study.

## Should Digital Impressions Be Part of Your Practice? *(Continued from page 1)*

### Characteristics of Five Scanner Systems

The following table shows key characteristics of five scanner systems, listed alphabetically.

Brand Company Price	System Evaluated	Capabilities			Scanning Tip Design	Handpiece Weight	Requires Powder	Capture Mode	Live 3D Model	Ease of Scanning
		Digital Impression	In-Office Restoration Design	In-Office Restoration Milling						
Apollo DI Sirona \$19,750	Cart with touch-screen	Yes	No	No		135 grams	Yes, light silver spray	Video	Yes	Excellent-Good
CEREC AC Connect with Omnicam Sirona \$49,995	Cart with trackball	Yes	Yes	Optional mill available		335 grams	No	Video	Yes	Excellent
CS 3500 Carestream Dental \$26,000	Laptop	Yes	Yes	Optional mill available		350 grams	No	Auto-capture of separate images	Yes, builds up with images	Excellent-Good
PlanScan Planmeca \$25,000	Laptop	Yes	Optional software available	Optional mill available		445 grams	No	Video	Yes	Excellent
True Definition 3M ESPE \$11,995 \$199 month data plan	Cart with touch-screen	Yes	Optional software available	Optional mill available		180 grams	Yes, light white spray	Video	Yes	Good

### Summary of Evaluation:

- All scanners tested produced impressions with adequate detail and clarity for accurate restorations.
- All scanners had live displays and 3D models showing data in real time.
- All scanners had visual and/or audible feedback when scanner was not collecting useful data, guiding user to correct positioning.
- All systems were easy to use, but required practice to become adept and efficient.
- Scanners could not successfully make impressions in some challenging cases and conventional impressions were required (see survey data, page 4).
- Intraoral access was increasingly difficult for 2nd and 3rd molars, especially in small mouths.
- System capabilities vary widely: single versus multiple units (e.g., bridges); quadrant versus full arch (e.g., frameworks, Invisalign); impression only versus in-office design and milling; and types of restorations possible (crowns, inlays, onlays, veneers, etc.).

# Should Digital Impressions Be Part of Your Practice? (Continued from page 3)

## Survey Data

Information from 260 owners (majority (73%) use in-office CAD/CAM systems)

- Scanner brand used:
  - 33% CEREC Bluecam (Sirona)
  - 23% CEREC Omnicam (Sirona)
  - 17% iTero (Cadent)
  - 9% E4D Dentist (E4D)
  - 8% CEREC "Redcam" (Sirona)
  - 6% True Definition (3M ESPE)
  - 2% Lava COS (3M ESPE)
  - 1% TRIOS (3Shape)
- How does accuracy compare to conventional VPS impressions? 56% better, 34% same, 7% worse
- Who performs scanning? 50% dentist always, 31% mostly dentist, 13% mostly assistant, 6% always assistant
- Are digital impressions economically feasible? 73% yes, 16% don't know, 12% no
- Is the scanner part of routine treatment? 57% yes, 29% special cases only, 14% no
- Do you also mill restorations in-office? 56% yes, 17% sometimes, 27% no

### When do you revert to conventional impression techniques? (multiple answers possible)

- 53% Scan not clear
- 52% Deep sub-gingival margins
- 50% Limited patient opening
- 41% Multiple restorations
- 41% Uncooperative patient
- 33% Uncontrolled seepage
- 28% Poor retraction
- 17% Indistinct margins

## Digital Workflow

Digital impressions can save time and materials, and reduce infection control issues for both the clinic and lab. Four possible workflows are shown, from digital impression to fabricated restoration.

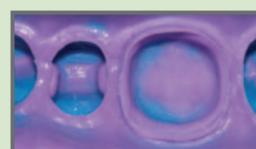
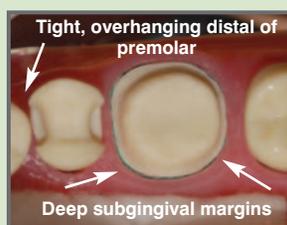
1. Digital impression.....designed .....milled in clinical office
2. Digital impression.....designed .....sent to lab .....restoration milled
3. Digital impression .....sent to lab .....designed.....restoration milled
4. Digital impression .....sent to lab .....model .....conventional fabrication

### Key steps in clinical procedure for making a digital impression:

1. Dry area (apply powder, if necessary)
2. Scan prep
3. Scan opposing teeth
4. Scan buccal view in occlusion
5. Review and prepare prescription
6. Click to send case to lab

## Accuracy of Digital Impressions

Several models and clinical cases were scanned to evaluate characteristics and ease of use of each digital impression system. The following images from one of the typodonts show ability to capture fine detail and anatomical structures.



Conventional VPS impression:  
All margins are clearly visible



Stone model made from conventional impression:  
All margins are clearly visible



### Results

- All systems were capable of capturing adequate detail for excellent impressions.
- Patient variables (opening, location of prep, isolation, active tongue, lips, etc.) had greatest effect on ease of use.
- Duration and difficulty of procedure can increase with need to apply and maintain powder coating on teeth.

## Clinical Tips

- Ideally, scanning should be delegated to staff members where legal.
- Gingival retraction is best accomplished with a two-cord technique.
- Margins and other areas must be clearly visible and free from pooled fluids for accurate detail.
- Retract tongue, cheek, and lips. Keep isolation materials out of image.
- Scan in a slow, methodical way to acquire data on first pass,

minimizing need to repeat missed areas. With practice, scanning can become as fast as making conventional impressions.

- Shorten learning period by taking a hands-on education course.
- Schedule open-ended appointments for the first few cases as you practice and develop your technique.
- Consider leasing a scanner as this option becomes more available.

## CR Conclusions:

The latest digital impression scanners are easier to use, provide better detail, have lower costs, and integrate with any digitally equipped dental lab. Users indicate they are economical, accurate, and becoming part of routine treatment; although conventional impression materials are still needed for many cases. New systems evaluated varied in features and intended uses, but all were capable of producing accurate, detailed impressions. Clinicians can select a system based on desired characteristics and how much of the digital workflow they desire to accomplish in-office. Digital impressions have been shown to produce well-fitting restorations, improve treatment quality, and re-ignite interest of patients and staff. This concept is expected to continue growing, separate from its origins with in-office CAD/CAM.

## New Concepts In Tooth Whitening Will Grow Your Practice! (Continued from page 1)

### Current Trends

**Pre-loaded disposable trays** eliminate impressions, stone casts, and custom tray fabrication. One-size-fits-all trays are loaded with a soft, sticky peroxide gel which molds around teeth. *Example brands: Opalescence Go (Ultradent), Venus White Ultra (Heraeus Kulzer), and Bite&White Ready2Use (Cavex).* CR testing showed good results using this concept (see *Clinicians Report June 2014*). Pre-loaded trays are also becoming available for in-office treatment. *Example brands: Iveri Whitening and Sensational Smile.*

**Reduced sensitivity formulations** incorporate potassium nitrate, sodium fluoride, amorphous calcium phosphate, hydrating compounds, or other additives and a balanced pH to increase patient comfort and promote tooth remineralization. CR research shows these additives do not completely eliminate sensitivity. This concept is currently available in about one third of commercial whitening products.

**Reduction of clinical fees** for simplified procedure using pre-loaded trays helps more patients move into esthetic dentistry.

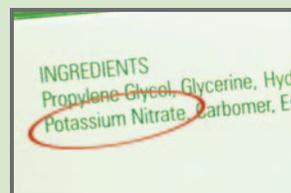
**Optimized potency** through refrigerated storage and shipping, mixing of components immediately before use, highly reactive formula, and lab-fabricated trays that minimize ingress of oral fluids. *Example brand: KöR Whitening.* This concept adds time and cost to procedure, but survey of users shows very good results with its combined at-home and in-office technique.



Pre-loaded, disposable at-home whitening tray (Opalescence Go)



Pre-loaded trays for in-office whitening (Iveri Whitening and Sensational Smile)



Ingredients designed to reduce tooth sensitivity

*Tooth whitening continues to be a “buyer beware” market because of excessive claims, inconsistent pricing, and accessories designed to impress the patient without improving the results. Fortunately, the overall quality and safety of tooth whitening products have significantly improved, and clinicians should educate patients on adequate whitening concepts. Use good judgment when selecting products to meet your patients’ desires.*

### Treatment Options (Data from CR survey, n=1041)

**At-Home:** Provided by 93% of clinicians, often in conjunction with in-office whitening (40%).

- Most popular brands reported: Opalescence PF (39%), Opalescence Go (12%), Zoom Nightwhite (11%), Zoom Daywhite (7%), and Crest Whitestrips (4%).
- Lower concentration gels used in custom trays (91%) or stock trays (5%) and worn 20–60 minutes each day for several days.
- CR research shows most gels lose effectiveness after about 30 minutes of wear time due to chemical breakdown and suck-out (*ingestion*). Reservoirs did not significantly improve results.
- Whitening progresses slowly but can be more profound and longer lasting with less tooth sensitivity. 95% of clinicians rated overall performance as excellent or good.
- Average cost to patient was \$200–\$300 total (range of \$0–\$600+).

**In-Office:** Provided by 35% of clinicians.

- Most popular brands reported: Opalescence Boost PF (43%), Zoom (30%), KoR (6%), and Pola Office (4%).
- Higher concentration peroxide gel applied multiple times for total of 30–60 minutes. Gingival tissues are usually protected with barrier resin.
- Whitening is often rapid and dramatic, subsiding slightly after tooth rehydrates. 83% of clinicians rated performance as excellent or good.
- Typically required 90 minutes total chair time, with staff performing majority of procedure.
- Average cost to patient was \$400–\$500 total (range of \$0–\$1,100+).
- Bleaching lights are used 46% of the time despite most research showing they are unnecessary.

**Over-The-Counter:**

- Lower concentration peroxide applied with adhesive strips, brush-on “pen,” mouthrinses, and numerous other methods.
- Although generally safe, unsupervised whitening should be discouraged due to lack of monitoring of effect on oral health.

### Clinical Tips

- **Staff members should accomplish majority of procedure** and provide verbal and written instructions to patient.
- **Make whitening more efficient and economical** for clinic and patient by selecting products which minimize chair time and staff tasks.
- **At-home whitening** provides the extended contact time required to remove dark or deep intrinsic stains.
- **In-office treatment** is useful for patients who desire whitening with only one or two treatments, but should cost more to cover overhead.
- **Numerous catalysts** (*heat, light, chemical compounds*) can accelerate the breakdown of hydrogen peroxide into useful radicals. Although bleaching lights are impressive for patients, the chemical formulation and contact time have more pronounced effects on whitening than use of light.
- **Irritated gingiva** (*red or blanched white*) can be soothed with topical vitamin E oil. Sensitive teeth can be soothed by reducing contact time each day, skipping days between treatments, or using desensitizing gels in trays.

### CR Conclusions:

Tooth whitening products are moving beyond the traditional custom trays and labor-intensive in-office treatments to simplified, pre-loaded, disposable trays, the most popular of which is Opalescence Go by Ultradent. Time and cost savings are bringing down clinical fees allowing more patients to participate in esthetic dentistry and stimulating additional esthetic procedures. Clinicians should set realistic expectations with their patients and avoid products designed to impress the patient and drive up costs without providing true benefit.

## Products Rated Highly by Evaluators in CR Clinical Trials

### Interproximal Reduction Discs with Increased Control, Stability, and Safety

#### Control Touch Mandrel

Wasatch Crest Technologies



\$37 Each (single sided)

\$38 Each (double sided)

The Control Touch Mandrel has a unique stabilizing wheel/finger-rest to stabilize the interproximal reduction disc during use. The extra control point gives added stability at a shorter distance to the rotating disk. Various sizes of disks available in double and single-sided versions. Available in three-pack at reduced cost (\$35/disk). May be used with disc guard (*not provided*).

#### Advantages:

- Excellent control of interproximal reduction with disc
- Both one-sided and two-sided abrasive styles available
- Better precision than previous interproximal discs
- Discs are good quality, thin, and sturdy

#### Limitation:

- No major limitations noted

**CR Conclusions:** 93% of 15 CR Evaluators stated they would incorporate Control Touch Mandrel into their practice. 93% rated them excellent or good and worthy of trial by colleagues.

### New Exam Glove Material is Resistant to Tear, Latex Free, and has High Clinical Use Rating

#### Posi-Prene Gloves

Clinical Supply Company



\$7.95/Box of 100 (8¢/Glove)

CR has been testing medical exam gloves for three decades. In the last major CR evaluation it was noted that many brands had thinner latex and more tearing upon donning (*see comparison of all gloves tested in Clinicians Report February 2013*). Posi-Prene Medical exam gloves are made of polychloroprene, a rubber also called neoprene, which is used in wet suits and other applications and is latex-free. Polychloroprene was the only glove material to receive an excellent grade for donning. It was also much less likely to tear than most latex brands. Posi-Prene also received excellent ratings for fit, tactile sensitivity, and cuff length, and an excellent-good rating for resistance to tearing. Now available in green, white, and pink colors.

#### Advantages:

- Glove is very elastic and stretches rather than breaking when donning
- Easy to put on and take off
- Adapts to hand for a good fit and comfort
- Good texture
- Does not inhibit set of VPS impression material like some latex and nitrile gloves

#### Limitation:

- Some VPS impression materials adhere to polychloroprene

**CR Conclusions:** 83% of 23 CR Evaluators stated they would purchase Posi-Prene Gloves for their practice. 95% rated it excellent or good and worthy of trial by colleagues.

### Fast Acting, Well Received Bio-compatible Tooth Desensitizer

#### Teethmate Desensitizer

Kuraray Noritake Dental



\$120/Kit

Teethmate Desensitizer for hygiene and restorative use is prepared by mixing one scoop of powder (*tetra calcium phosphate and dicalcium phosphate anhydrate*) with one drop of an aqueous solution to form hydroxyapatite. Slurry is applied twice to the dried sensitive tooth surface (*exposed dentin*) in a rubbing action for at least 30 seconds each, and residual is rinsed away after second application. *CR Note: For longer lasting desensitization of cervical surfaces, an adhesive may be placed after the second application to cover and protect the treated area from initial salivary contamination.*

#### Advantages:

- Most patients reported immediate relief of sensitivity
- Very easy to mix and use
- Neutral flavor
- No need for isolation or curing

#### Limitations:

- Multiple tooth applications require multiple hand mixes
- A few patients become sensitive again after a few weeks

**CR Conclusions:** 70% of 23 CR Evaluators stated they would incorporate Teethmate Desensitizer into their practice. 70% rated it excellent or good and worthy of trial by colleagues.

### Titanium-Coated Sharp Instruments Accomplish Easier Atraumatic Extractions while Preserving Alveolar Bone

#### Luxation Blades

Nordent Manufacturing



\$67/Instrument

Luxation Blades are designed to be easily inserted along the root surface to cut the periodontal ligament (*PDL*) prior to extraction. The use of luxation instruments helps to minimize tissue trauma and preserve alveolar bone. Luxation Blades feature a long slender profile and ultra-sharp blades with titanium coating to retain sharpness. Four blades: 3-mm curved, 3-mm straight, 5-mm curved, and 5-mm straight.

#### Advantages:

- Blades are very sharp and easy to insert along and cut PDL
- Tips are strong and durable
- Handles are ergonomic and shaped for good, comfortable grip

#### Limitation:

- As with other luxation instruments, they should not be used as an elevator because of potential breaking of the thin sharp tips

**CR Conclusions:** 95% of 20 CR Evaluators stated they would incorporate Luxation Blades into their practice. 95% rated them excellent or good and worthy of trial by colleagues.