

THE DENTAL ADVISORTM

Improving Patient Care Through Research & Education

Endodontics:

Technology provides endless choices today

The dental world was once a simple path to navigate. Clinicians were able to provide the best perceived treatment for their patients in part due to the limited materials and techniques available. In recent years, the endodontic market has been flooded with an array of products and techniques, complicating the decision-making process for the dentist.

This issue of THE DENTAL ADVISOR simplifies the different areas of endodontics by comparing past and present techniques. Laboratory research in the area of minimally invasive endodontics is also featured.

November 2015

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RATINGS :

Excellent	++++
Very Good	+++
Good	++

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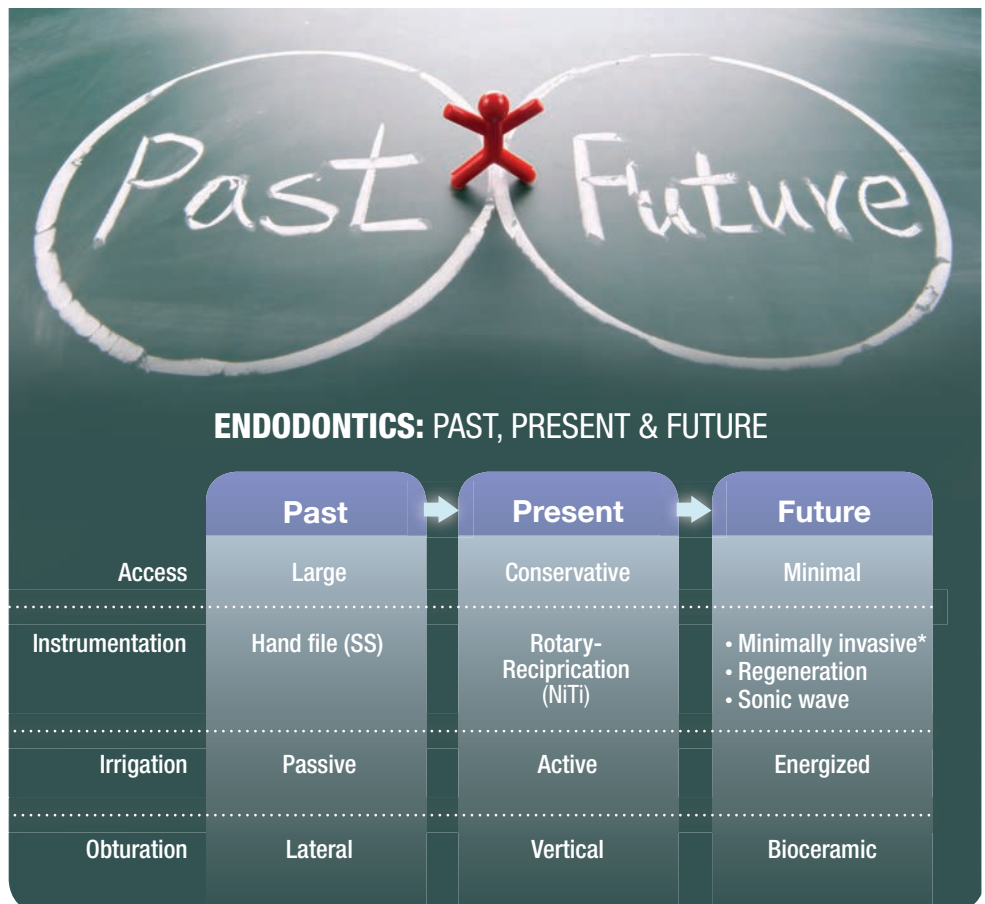
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From the Desk of Dr. Bunek, Editor-in-Chief



Endodontics is an area of dentistry that some general dentists are reluctant to take on in their everyday practice. With the continuous stream of new technology and new ideology, it is no wonder that some practitioners shy away from the field and opt to refer even simple root canal treatment to specialists. I wish to address the general dentist who wishes to accommodate their patient population by addressing endodontic treatment well within their capabilities in their own practice. The key to an effective endodontic protocol in a non-specialty office is continuing education. It is through the consistent completion of continuing education courses, that a general dentist can gain the knowledge base and skill set necessary to make decisions that influence the techniques, equipment and technology adopted into their practices. In this issue, Dr. Diwakar Kinra offers an overview of current trends and the future direction of endodontic treatment. Once armed with this information and the necessary education, we can trust that we are equipped to choose the methodology that will be most effective and beneficial to our patients. In the near future we will be offering a full day hands-on course with Dr. Kinra. I encourage you all to attend! As always, we welcome your input and suggestions. You can reach me at drbunek@dentaladvisor.com.

Rotary endodontics came on the horizon in the 1990's. With only a few companies supplying these systems, innovation was slow to come to the market. This is far from the world we live in today. A new file design and system comes out every year to 18 months, making it difficult to stay abreast of the abundance of choices while staying on top of all the new technologies. The infographic below illustrates where we have been and where we are headed in the different phases of endodontics.



* As illustrated in Figures 1 and 3.

Endodontics today: minimally invasive instrumentation

In today's endodontic market there are a plethora of rotary engine driven files that can be used in various techniques. From rotary to reciprocation and everything in between, it is hard to decipher what system makes sense for your practice. Filing creates a shape that allows better access to the root canal anatomy. While the file system removes a majority of the bulk debris and tissue from the canals, it does not disinfect. Its primary purpose is to shape the canal.

Bigger is not better

Canal shape has been a controversy over the past decades. Previously, minimally tapered hand files were used to create shapes within the canal. A larger apical diameter was necessary to ensure disinfection to the apex. Now with greater taper built into the file the over expansion of the apical size may not be necessary. As seen in (Fig. 1) the irrigating needle size in comparison to the apex may influence how large of a file is actually needed to predict cleanliness. It is important to note that irrigation only takes place effectively 2-3 mm beyond the recommended side vented needle tip (Fig. 2). For example, a size 30 gauge irrigating needle is approximately a size 30. Therefore, a tip size 25 file with 0.06 taper at 2 mm from the apex will be a size 32. This allows for the irrigating needle to penetrate the canal the proper distance for full disinfection. The end result allows clinicians to successfully reduce the amount of tooth structure and dentin removed.

Needle		Nominal O.D.		
Gauge	mm	inches	tol. (in.)	mm
10	3.404	0.1340	±0.0010	2.692
11	3.048	0.1200	"	2.388
12	2.769	0.1090	"	2.159
13	2.413	0.0950	"	1.803
14	2.108	0.0830	"	1.600
15	1.829	0.0720	±0.0005	1.372
16	1.651	0.0650	"	1.194
17	1.473	0.0580	"	1.067
18	1.270	0.0500	"	0.838
19	1.067	0.0420	"	0.686
20	0.902	0.0355	+0.0005 -0.0000	0.584
21	0.813	0.0320	"	0.495
22	0.711	0.0280	"	0.394
22s	0.711	0.0280	"	0.140
23	0.635	0.0250	"	0.241
24	0.559	0.0220	"	0.292
25	0.508	0.0200	"	0.241
25s	0.508	0.0200	"	0.140
26	0.457	0.0180	"	0.241
26s	0.467	0.0184	"	0.114
27	0.406	0.0160	"	0.191
28	0.356	0.0140	"	0.165
29	0.330	0.0130	"	0.165
30	0.305	0.0120	"	0.140
31	0.254	0.0100	"	0.114
32	0.229	0.0090	"	0.089

Figure 1: Syringe Needle Conversion Chart



***Figure 2:** First and third are side-vented irrigating needles that contribute more to safety as opposed to traditional needles.

Endodontics today

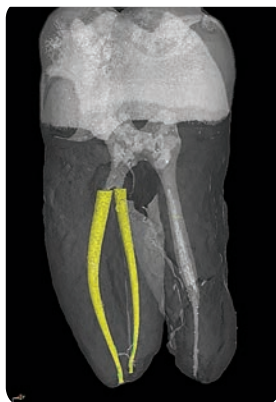
Minimally invasive instrumentation



***Figure 3:** A TruShape file, the latest in minimally invasive file technology.

The preservation of intra-canal tooth structure using minimally invasive endodontics has been advocated in recent times. To that effect, it is important to identify a technique that is safe, less invasive, and allows for maximum disinfection of the complex anatomical regions of the root canal system.

Throughout medicine a minimally invasive approach has been implemented on many surgically invasive procedures. As we decipher its use in dentistry, we are faced with an age old phenomenon. Using metallic files allows for two types of surfaces within the canal system: the instrumented and uninstrumented anatomy of the canal system. The instrumented portions of the canal wall are covered with the byproduct of filing called a smear layer, composed of inorganic materials. The uninstrumented portions of the canal walls are covered with the original organic material of the canal remnants. The only process that can address both conditions of the canal wall is thorough irrigation.



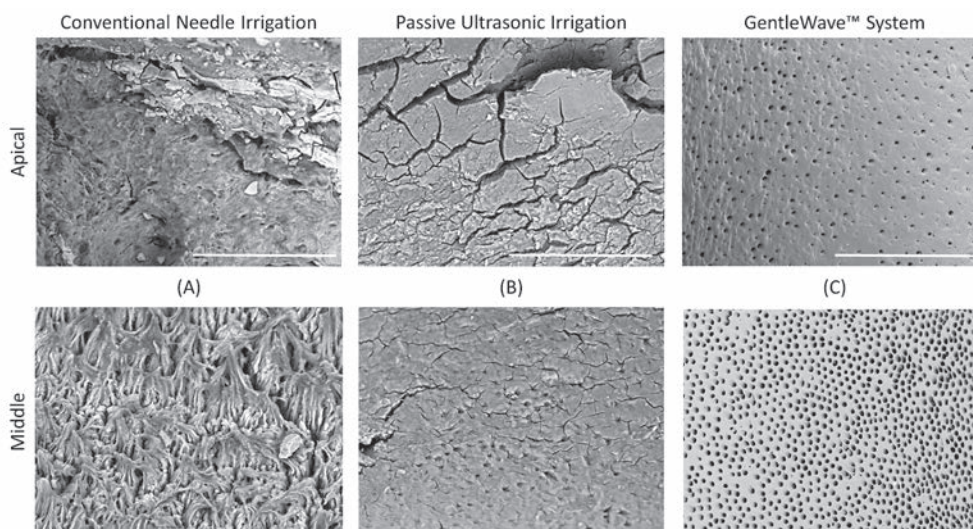
A sequence featuring continuous taper 06 instruments (Figure 3) was used in the canal seen on the left side of this image. The final instrument was 30/.06. A similar sized tip (30v) TRUShape was the final instrument used in the right-most shaped canal. Image courtesy of Ove Peters.

Irrigation

No one irrigating solution can effectively remove all portions of the remaining debris within the canal system. This forces the practitioner into using an irrigating protocol to ensure all areas of the canal are free of debris. Once disinfected, the dentinal tubules need to be exposed for proper adhesion of sealer and gutta percha. The most common irrigants used today are sodium hypochlorite, EDTA, Chlorhexidine, and combination or multi-ingredient irrigants. With proper use, manipulation and activation of the irrigants, the field of endodontics is approximating 100% disinfection of the root canal system. Delivery of irrigants can be improved by using ultrasonic instruments, sonic instruments (*EndoActivator*® TULSA Dental Specialties), lasers (i.e. *PIPS*™) and negative pressure devices (*EndoVac*® Sybron Endo) Fig. 4.

A paradigm shift will have to occur for dentists, from focusing on the file as the primary tool for success, to the irrigant making the difference. The development of “super irrigants” is happening now. Real innovation will come from a device that will be able to deliver these super irrigants that is also easy to use. Future direction in irrigation involves safer solutions which provide disruption of biofilm with short, mid and long term killing effects. Newer irrigation devices will lead to smaller shapes and significantly shorter irrigation time, with more assurance of bacterial kill.

Figure 4: Microscopic photography of canals after irrigation.



New Horizons in Endodontics

A transformative endodontic technology, the **GentleWave™ System** by Sonendo®, was recently launched in select US markets. The **GentleWave™** system is composed of a console and a sterile handpiece designed for single-patient use. The handpiece delivers a stream of treatment solution into the pulp chamber which allows for the mechanism of action to deep clean the most complex of intracanal anatomies. The interplay of the proprietary **GentleWave™** Multisonic energy, vortical fluid dynamics, and chemistry of the treatment fluid, results in enhanced dissolution and removal of pulp tissue and biofilm from the root canal system. Moreover, the **GentleWave System** maintains the integrity of the intracanal tooth structure as it requires minimal shaping of the root canals. Like many of the recent advancements we have seen in medical technology that have improved patient quality of care (minimally invasive robotic surgery and cardiovascular angioplasty), the **Gentle Wave** method of cleaning and canal disinfection helps endodontists and their referring dentists improve patient outcomes and save more teeth through sound science.



Gentle Wave System
by Sonendo®

CBCT images showing molars that were shaped to #25/.08 and treated with the **GentleWave™ System**.

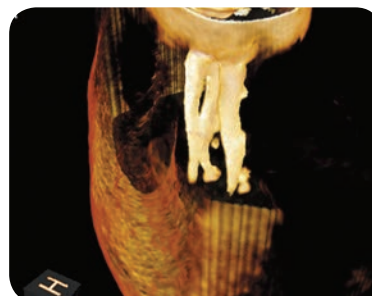


Figure A.
Shows tooth
#18 with
a missed
mesiolingual
canal and
isthmus
between the
mesial canals.



Figure B.
Shows tooth
#30 with a fin
in the distal canal
and isthmus in
mesial canals.

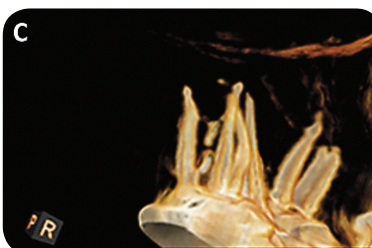


Figure C.
Shows tooth #2
with isthmus
in palatal and
mesiobuccal
canals.

Photos courtesy of Randy W. Garland, DDS/Sonendo

Summary

The field of endodontics is rapidly changing and the discoveries yet to come are allowing a better experience for the dentist and patient. Each generational change allows us to achieve a higher success rate which will benefit the dental community as a whole.

Question: *Dr. Kinra, what advice can you give a general practitioner on when to refer to a specialist?*

Answer: I recommend using the American Academy of Endodontics Case Difficulty Assessment Form to determine whether or not a case should be seen in your office, or referred to a specialist. Filling out this form is a quick and easy way to determine the level of difficulty about the case at hand. The patient experience should reflect cases that show superior dental skills, experience and knowledge of the procedure. If done correctly and painlessly, a single visit root canal when possible can be a great practice builder and service to patients.

ABOUT THE AUTHOR



Diwakar Kinra, DDS, MS received his dental degree from the University of Michigan, School of Dentistry, in 1999. At that time he proceeded into private practice for the next 3 years. In 2002, he returned to obtain his masters degree in endodontics at the University of Detroit-Mercy, School of Dentistry. In 2004, after the completion of his postgraduate degree, he immediately began his solo private practice limited to endodontics in Flint, Michigan. Dr. Kinra is an Adjunct Professor of Graduate Endodontics and Graduate Periodontics at the University of Detroit-Mercy, School of Dentistry. He is a member of the AAE, MAE, ADA, MDA and GDDS dental societies and is a clinical consultant for THE DENTAL ADVISOR. Dr. Kinra has spoken on clinical endodontics and practice management since 2005. He has spoken at over 35 universities domestically and internationally. His clinical lectures focus on all aspects of endodontics.



Purpose: To compare the efficiency of preparing the tooth for endodontic access and finding canals using three different endodontic bur systems.

Access and Root Canal Location Burs Used for Each Method

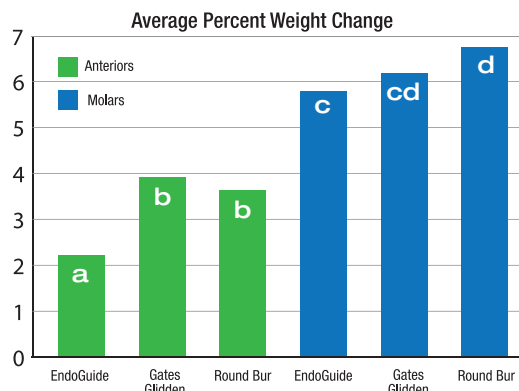
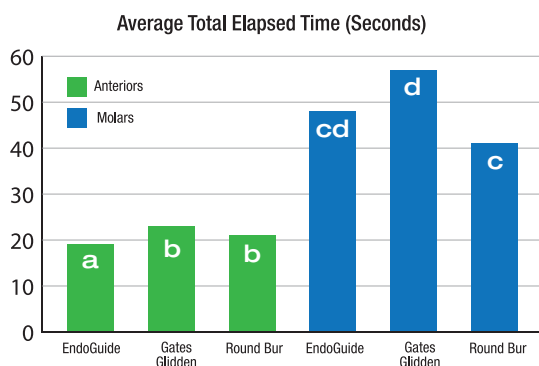
Bur System	Anterior Access	Anterior Canal Location	Maxillary Molar Access	Maxillary Molar Canal Locations
SS White	EG1A	EG1A	Great White 2	EndoGuide #2
Gates Glidden	#4 Round Bur	Gates Glidden #6	#4 Round Bur	Gates Glidden #6
Round Bur	#4 Round Bur	#6 Round Bur	#4 Round Bur	#6 Round Bur

Test Method:

Five dentists who perform endodontics in their practices used each endodontic method (bur set) to produce access to the pulp chamber of the acrylic teeth and then locate the root canals on a.) a maxillary incisor and b.) a three-rooted molar. Each method was timed from beginning to canal identification (one for the incisor and three for the three-rooted molar). Two evaluation categories served as a way to measure the efficiency of each bur system:

A. Elapsed Time: How time consuming was the procedure to perform? This was determined by measuring elapsed time from beginning of cutting to identification of the canal or all three canals (maxillary molar). A stop watch was used to keep track of only the time when the bur was cutting tooth tissue.

B. Which method was the most tooth-tissue-conserving? This was determined by weighing the tooth before and after the procedure and determining the weight of the material removed to gain access to the canal(s). Following use of the burs on the teeth, each tooth was blown with a high flow air syringe to remove any loose debris from the preparation and then dried in an oven at 37° C for 24 hours and then re-weighed. The final weight was subtracted from the pre-test weight and this was divided by the pre-test weight and multiplied by 100 to determine the percent change in weight for each method and type of tooth. Averages for the five clinicians are reported.



Conclusions:

1. Total elapsed time for access and location of the canal on the anterior teeth was approximately the same for each method.
2. Total elapsed time for access and location of the canals on both the anterior and the molar showed similar patterns with Gates Glidden being significantly slower than the round bur. The clinicians felt there was a slight learning curve with the **Great White 2™** Bur which when mastered, would reduce the time significantly. There is likely a learning curve with the **Endoguide™** (SS White) bur that would lower the elapsed time for the **Endoguide™** method with practice. Two of the clinicians thought it cut aggressively and noted they were timid when using it.
3. The comments were significantly in favor of the **Endoguide** method for both the anterior teeth and molars for access and canal location and not in favor of the round bur method. Most clinicians were impressed with the ease of use of the **Endoguide™ EG1A** compared with the round bur method used in both the Gates Glidden technique and the round bur technique.
4. Less weight loss and, therefore, less sacrifice of dental tissue occurred when the **Endoguide** method was used for anterior teeth compared to the other two methods.
5. All clinicians appreciated the long slender shank on the **Endoguide** burs as it improved visibility.

SOVA Night Guard

+++ 1/2

Akervall Technologies
www.sovanightguard.com

Description

SOVA Night Guard

is a bruxism appliance designed to be formed by the patient at home. The finished guard is a tough polymer material with a flat occlusal surface and perforated labial and lingual flanges. The thermoplastic material has a high tensile strength and is biocompatible, biodegradable and BPA-free. The night guard starts as a flat, horseshoe-shape; after immersion in 130° water, the material becomes pliable. The night guard is then molded against the teeth until it becomes hardened, approximately one minute. **SOVA Night Guard** is only 1.6 mm thick adding to its comfort and can be heated and remolded up to 20 times. The **SOVA Night Guard** is available to dental professionals and through retail outlets. A 120 day durability warranty is provided. Thirty-one consultants evaluated **SOVA Night Guard** after delivering 155 units to patients. This night guard received an 81% clinical rating.

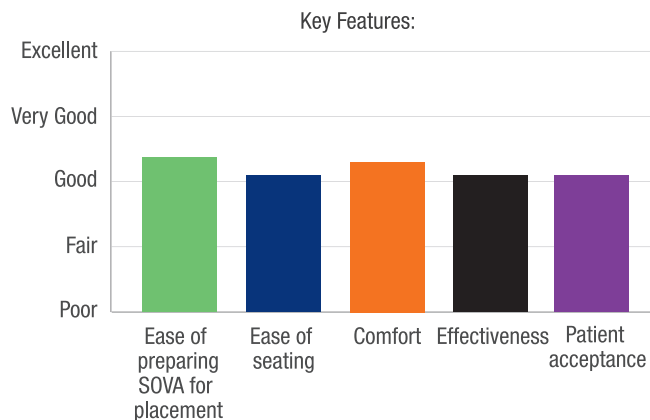


Product Features

SOVA Night Guard provides a quick, easy option for protecting teeth from the effects of bruxism. The thin profile and perforated surface of **SOVA Night Guard** makes it comfortable for patients, even during the daytime.

The perforations serve three main functions:

1. Allow for the natural flow of air and saliva.
2. Aid in creating a true custom fit.
3. Oscillate on impact to diffuse grinding forces.



Consultants' Comments

"Great option when we need an immediate splint."

"Molds and fits better than other 'boil-and-bite' guards."

"Excellent adaptation and retention can be achieved."

"The ability to reheated and re-adapted numerous times is one of the best features."

"Forming the splint may take a couple of tries. It is very limp at first and can slide off of the teeth."

"Does not fit all dentitions - this is always a problem with a stock item."

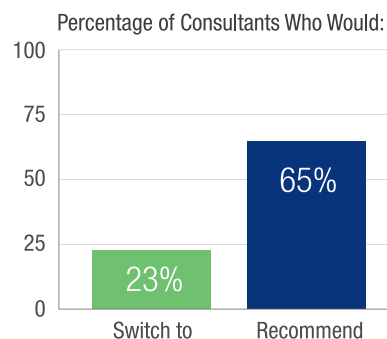
Suggested Retail Cost

Each: \$44.99

Consultants used **SOVA Night Guard** for the following circumstances: transitional dentition due to ongoing restorative treatment or growth, orthodontic patients, financial or time constraints, and as a trial appliance. Forming the splint is not difficult, but a successful outcome does require centering the soft material over the arch then pressing the lips and tongue against it. Often a second attempt was necessary after reheating the splint. Dentists would have preferred a thicker occlusal surface for durability and increased opening. When a lab-fabricated splint is not an option, **SOVA Night Guard** can provide occlusal protection from grinding.

Clinical Tip

While **SOVA Night Guard** is intended for use on the upper arch, it can be formed over the lower teeth if desired.



BJM Labs

www.bjmlabs.com

Description

PRIMA 2000 is a 5th-generation bonding agent combining primer and adhesive in one bottle. **PRIMA 2000** is compatible with all self-cure or light-cure composite, compomer, and resin cements. Clinical procedure includes etching and rinsing the tooth followed by application of **PRIMA 2000**, leaving it undisturbed for 15 seconds, applying air for 15 seconds, and light curing for 20 seconds. **PRIMA 2000** is supplied in a 5 mL dropper bottle with a laminated instruction card. **PRIMA 2000** was evaluated by 23 consultants in 662 uses. This 5th-generation bonding agent received an 86% clinical rating.

Product Features

PRIMA 2000 has a low viscosity and good wetting ability for complete coverage of the etched surface. Material should be dispensed at the time of use, as the acetone solvent evaporates quickly. It can be dispensed directly onto a brush tip for small procedures or into a well for application onto multiple teeth. A shorter procedure time and curing time would have been preferred. **PRIMA 2000** is colorless and conducive to esthetic restorations with no white line at the margin.

Clinical Tip

- Refrigeration is recommended.



Consultants' Comments

"No post-op sensitivity."

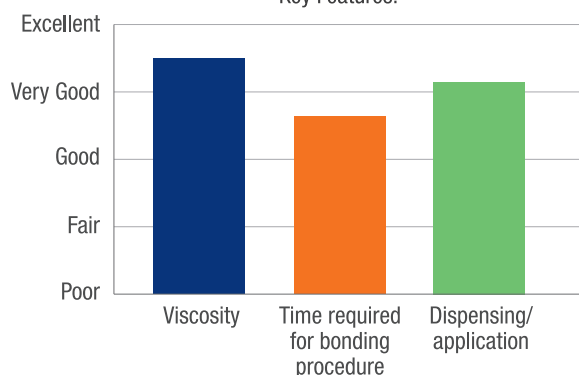
"Low film thickness."

"Excellent esthetic results."

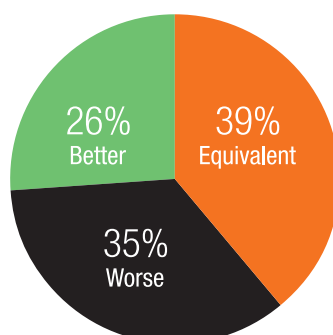
"Complete procedure is time consuming."

"Strong odor."

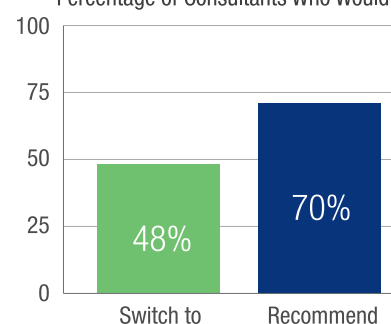
Key Features:



Compared to Competitive Products:



Percentage of Consultants Who Would:



Q-Etch & Q-Etch UF

++ ++

BJM Labs

www.bjmlabs.com

Description

Q-Etch is a 37% phosphoric acid etching gel for the surface treatment of enamel and dentin prior to bonding procedures. **Q-Etch** contains silica fillers and has a medium viscosity; **Q-Etch UF** is an unfilled formulation with a thickening agent. Recommended etching time is 30-60 seconds for enamel, and the etchant should be rinsed for 20 seconds. Both formulations are water soluble, blue in color and come in 1.2 mL or 10 mL syringes with pre-bent 18 gauge tips. **Q-Etch** and **Q-Etch UF** were evaluated by 25 consultants in 711 uses. This etchant received an 88% clinical rating.

Product Features

Q-Etch and **Q-Etch UF** achieve effective etching of enamel and rinse off easily. The consistencies between the two formulations handle very differently, and consultants favored **Q-Etch**. Where the unfilled version strings out of the applicator tip and forms a cohesive mass on the tooth, the filled etchant is easier to spread. Both stay where placed and rinse off easily. The familiar blue color is highly visible, which helps to ensure complete removal.



Consultants' Comments

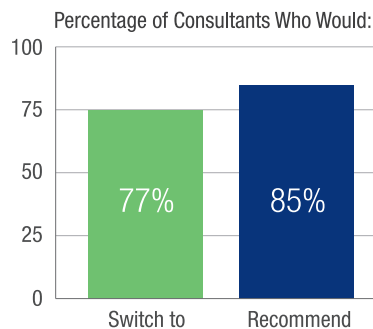
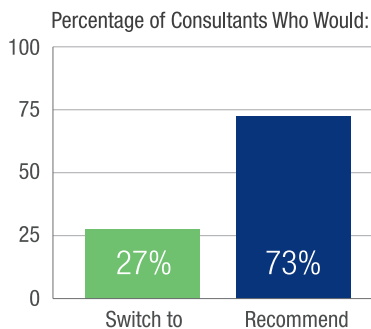
"Rinses off cleanly."

"Precise placement - stays where you want."

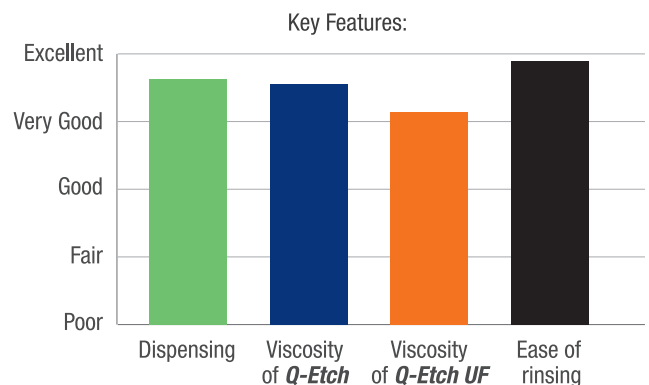
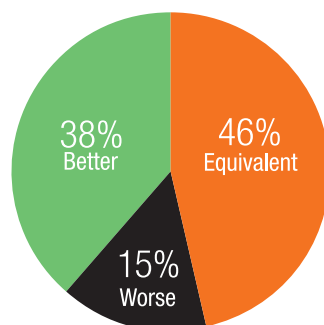
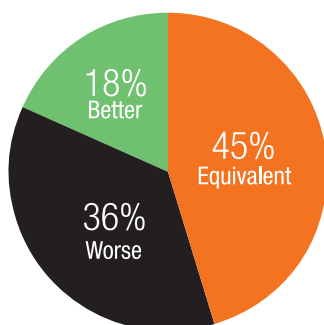
"Gel does not dry out in the syringe."

"Never clogs in the applicator tip."

"The unfilled etch is sticky and resists being spread around."



Q-Etch UF Compared to Competitive Products: **Q-Etch** Compared to Competitive Products:



A&M Diamond Burs

++++ 1/2



A&M Instruments

www.usburs.com

Description

A&M Diamond Burs are manufactured with multiple layers of premium quality diamonds allowing for smooth, efficient cutting and heat reduction. The burs are FDA registered and ISO certified. Varying packaging options include a six-unit box for multi-use burs and individual blister packaging for single-patient burs. **A&M Diamond Burs** are available in over a thousand shapes, sizes and grits, including ultra-fine, extra fine, fine, medium, coarse, and super coarse. Multi-use, friction grip **A&M Diamond Burs** were evaluated by 26 consultants in 724 uses. These diamonds received a 91% clinical rating.

Product Features

A&M Diamond Burs provide very good cutting efficiency. Many consultants used them for crown preparations and found that they lasted for three to five uses. These multi-use **A&M Diamond Burs** are packaged in a plastic box containing six burs of the same kind and must be sterilized before use. The burs cut smoothly and cleanly and are durable for multiple clinical procedures. They run concentrically without chatter or vibration. Burs follow commonly used color coding designation for easy identification.



Consultants' Comments

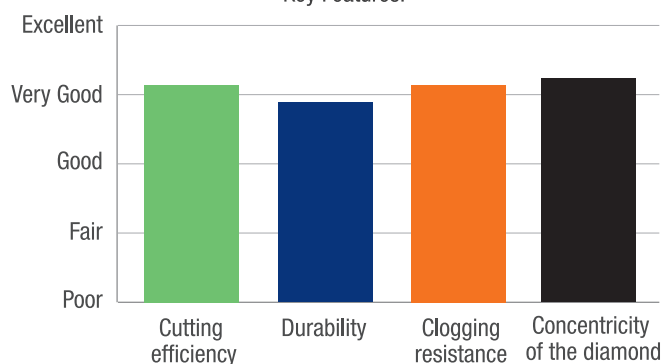
"One of the best burs I have used."

"A well-manufactured product...and made in the USA."

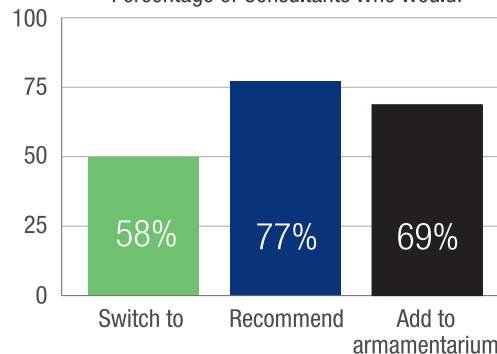
"**A&M Diamond Burs** are a great value."

"Every option is available."

Key Features:



Percentage of Consultants Who Would:



THE DENTAL
ADVISOR

See more "Ask the Editors" questions online at www.dentaladvisor.com

Ask the editors:

Whats the best way to clean a crown prior to final cementation?

Answer: **Ivoclean** (Ivoclar Vivadent) is a simple, effective product for cleaning all types of indirect restorations prior to final cementation. This product is applied to the restoration after try-ins are complete. Simply scrub on the cement side of the restoration for 20 seconds, rinse, and dry. Then cement the restoration with your choice of cement. Our editors and consultants liked this product and many of them have incorporated it into their practices. It has no detrimental effect on the bond strength of the cement to the restoration and may in fact enhance this bond!

Clearfil Majesty ES Flow



Kuraray Noritake Dental Inc.

www.kuraraydental.com

Description

CLEARFIL MAJESTY ES Flow is a universal flowable composite indicated for use in all classes of restorations. This composite contains 75% filler (by weight), including submicron fillers treated with a silane coupling agent. **CLEARFIL MAJESTY ES Flow** is supplied in 2.7 g (1.5 mL) syringes and is available in shades A1, A2, A3, A3.5, A4, KA6, B1, B2, XW, and W. **CLEARFIL MAJESTY ES Flow** can be placed in layers up to two millimeters deep and has a curing time of 10 seconds with an LED light with an intensity of 1100-1400 mW/cm². **CLEARFIL MAJESTY ES Flow** was evaluated by 29 consultants in 909 uses. This universal flowable composite received a 98% clinical rating.

Suggested Retail Cost \$65.21/1.5mL syringe

Product Features

Having a universal composite with a flowable viscosity can often be a clinical advantage. **CLEARFIL MAJESTY ES Flow** has excellent esthetics and polishability when used as a filling on the surface. It can also be used as a base or liner under restorations. The viscosity allows placement without running or slumping, and it adapts readily to cavity walls and flows into narrow areas and undercuts. The composite is fairly translucent and blends imperceptibly with enamel. In cases where no occlusal adjustment or finishing is needed, the surface of **CLEARFIL MAJESTY ES Flow** can be wiped with alcohol rather than polishing with rotary instruments. This produces a glossy surface and saves time.



Consultants' Comments

"One of the best flowable composites I have used."

"The material blended so well with the tooth structure that you had to look hard to find the interface."

"Syringe design prevents oozing from the tip."

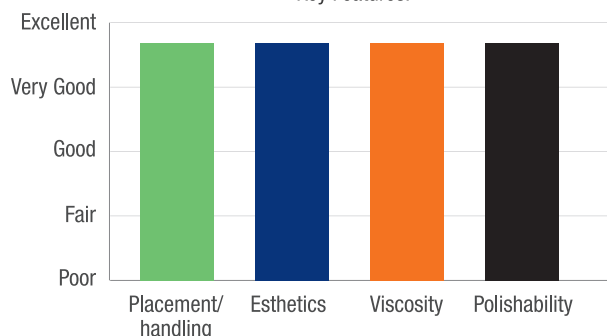
"Readily apparent on radiographs."

"Provide an opaque shade for blocking out dark areas."

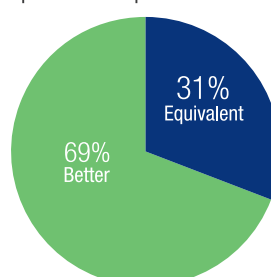
Clinical Tip

- Keep the tip submerged in the material while expressing to avoid incorporation of bubbles.

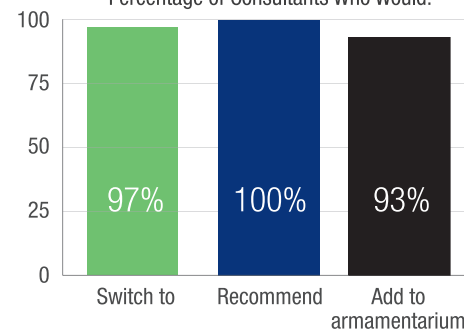
Key Features:



Compared to Competitive Products:



Percentage of Consultants Who Would:



ACTIVA BioActive Restorative

6-year Clinical Performance

++ ++ ++ ++ ++

Pulpdent Corporation

800.343.4342 - 617.926.6666

www.pulpdent.com; www.activabioactive.com

Description

Bioactive restorative materials are a relatively new concept in dentistry. They are restoratives that reportedly release more fluoride than glass ionomers. In addition, these resins react to pH changes in the mouth by uptaking calcium, phosphate, and fluoride ions ultimately helping to maintain the chemical integrity of tooth structure. This class of composites can be placed with or without a bonding agent, and is delivered via a dual-barrel automix syringe.



ACTIVA BioActive-Restorative
PULPDENT®

"I was surprised how good the esthetics looked at one year, especially for anterior restorations."

*The product received a
**98% clinical
performance rating
at the 1-year recall.***

Clinical Evaluation Protocol

A total of **183 restorations** were originally placed (both anterior and posterior) and **96 of these restorations** were recalled at one year. These restorations were placed with and without the use of a bonding agent after etching (*Figure 1*), and with one, two, three or four surfaces (*Figure 2*).

Fig. 1: Etch and Bond vs. Etch Only.

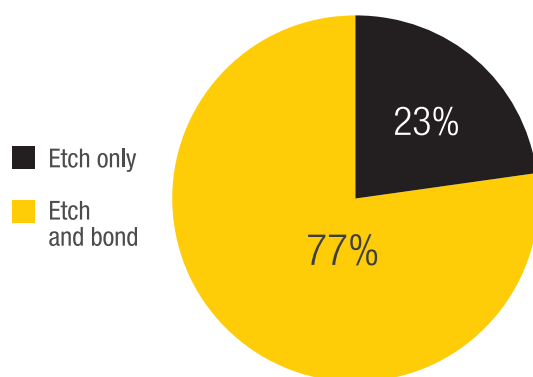
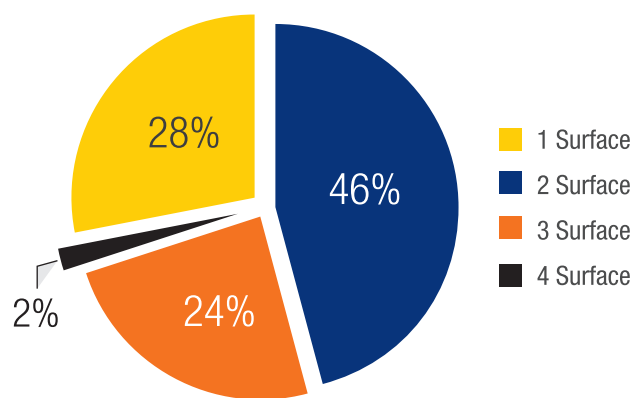


Fig. 2: Surfaces of Restorations at Recall.



Results at One Year

Lack of Postoperative Sensitivity

Patients reported some level of sensitivity associated with 5% of the 96 restorations recalled at one year. In three of these cases, patients experienced a moderate level of sensitivity immediately after placement and a decrease in sensitivity over time until they were asymptomatic. Two of these patients had restorations placed with bonding agent. One restoration was replaced due to an air bubble which was detected in a subsequent radiograph, and one was a very deep restoration which eventually needed root canal therapy. These conditions do not appear to be associated with the restorative material selected. No sensitivity was reported by patients at one year recall.

Esthetics

The esthetics of the restorations was excellent (Figure 3). Ninety-six percent of recalled restorations received a rating of 5, whereas 2% received a rating of 4, and 2% received a rating of 3.

Resistance to Fracture/Chipping

Resistance to fracture and chipping were excellent. None of the recalled restorations exhibited any fracture or chipping.

Resistance to Marginal Discoloration

Resistance to marginal discoloration was rated as excellent (Figure 3). There were no observations of marginal staining at one year.

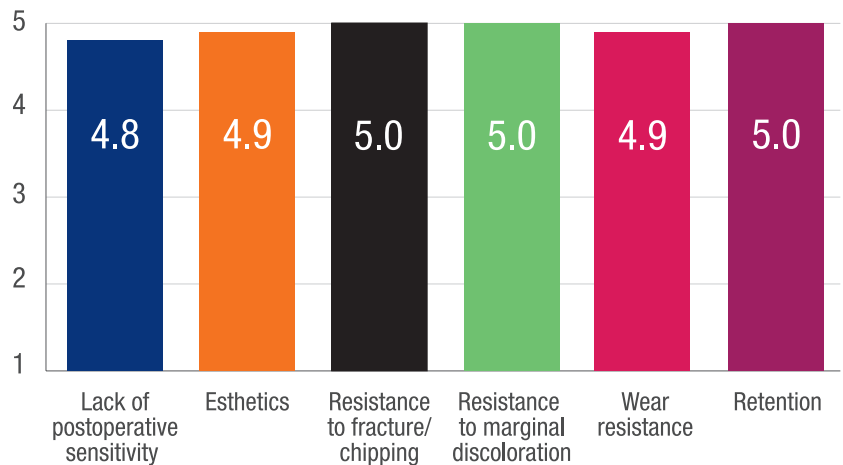
Wear Resistance

Ninety-nine percent of the restorations exhibited no signs of wear (Figure 3). Only one of the recalled restorations exhibited some wear and received a rating of 3.

Retention

Retention was excellent (Figure 3) - there were no debonds at the one-year recall.

Fig. 3: Results of *ACTIVA BioActive-Restorative* at 1 Year.



Each category was rated on a 1 to 5 scale:
1=poor, 2=fair, 3=good, 4=very good and 5=excellent.

“Very nice delivery system.”

“Having good uptake of calcium, phosphate and fluoride ions is a huge plus.”

“No bonding agent is a desirable property especially with pediatric patients.”



Tooth #19^o at one-year recall

Summary

The ease of placement, finishing, polishing and final esthetics of **ACTIVA BioActive-Restorative** was rated excellent. The material performed extremely well at one year. Every category that was evaluated received a 96% or better rating. **ACTIVA BioActive-Restorative** received a clinical performance rating of 98% at one year.

“Excellent material to use for restorations and cores.”

Sani-Soak Ultra

Enzyme Industries, Inc
www.enzymeindustries.com

++++ 1/2

Description

Sani-Soak Ultra is an anti-corrosive, enzymatic cleaner that can be used as an ultrasonic cleaner and/or an evacuation system cleaner. **Sani-Soak Ultra** is designed to brighten and extend the life of instruments, is non-toxic, and is safe to use on burs, and instruments. It is available in a lemongrass lavender scent. **Sani-Soak Ultra** is available in a one-quart bottle or a 64-count box of 0.5 oz uni-dose packets. The quart bottle has a built-in "tip and measure" cup, and it yields 64 gallons of cleaner. **Sani-Soak Ultra** was evaluated by 32 consultants in 907 uses. This ultrasonic cleaner and evacuation system cleaner received a 91% clinical rating.



Consultants' Comments

"It did not break down in ultrasonic cleaner like the other solutions do - stays bubbly all day."

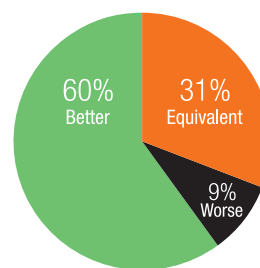
"Effective while being nontoxic."

"Instruments come out shiny."

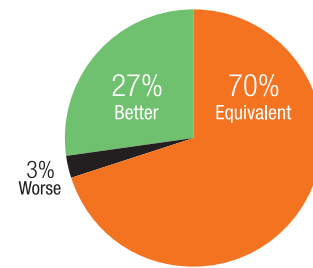
"Cleaned up instruments that were starting to rust."

"Opinions were split on the scent. Half found it to be clean and pleasant; the other half found it to be too strong."

Sani-Soak Ultra as an ultrasonic cleaner:



Sani-Soak Ultra as an evacuation system cleaner:



Suggested Retail Cost

Sani-Soak Ultra (Quart Container-64 Doses)	\$43.95
Sani-Soak Ultra (64-Single Unit Doses)	\$52.95

Product Features

Many offices like the fresh scent of **Sani-Soak Ultra** while others found it to be strong or offensive. The scent becomes more apparent in small spaces and becomes stronger as the ultrasonic solution warms up after repeated use. This versatile product saves storage space by offering multiple uses. When used as an ultrasonic cleaner or pre-soak, **Sani-Soak Ultra** effectively cleans organic debris from stainless steel instruments, leaving them clean and shiny. Some reduction in existing rust spots can be seen. Offices that prefer to avoid measuring the concentrate find the unit-dose packets to be a great convenience. Others prefer the quart bottle that offers easy and accurate measuring. The non-toxic formulation is an important consideration for many dental offices.

Clinical Tips

- Use of Sani-Soak Ultra as an evacuation system cleaner should be limited to wet vacuum systems. Dry vacs require a non-foaming cleaner.
- When mixing, fill container with water first, then add Sani-Soak Ultra to avoid foaming.

SPECIAL THANKS TO:

Select Senior Clinical Consultants (Over 20 years):

J. Amara, CT · R. Fisher, OH · W. Gregory, MI · E. Katkow, MD · J. Lockwood, MI · J. Mayer, OH · W. Nagy, TX · G. Poy, MI · J. Shamraj, MI · R. Trushkowsky, NY · P. Yaman, MI

Senior Clinical Consultants (15-19 years):

R. Anthony, OH · K. Baker, TX · F. Berman, PA · L. Brimhall, MT · M. Briskin, NY · L. Brown, MI · R. Ciccone, MI · C. Colbert, MI · M. Conrad, PA · J. Dingman, WI · J. Doueck, NY · M. Dwoskin, MI · M. Eannaccione, NY · R. Engle, IL · K. Fairbanks, MI · K. Fischer, IN · G. Franco, NY · N. Garlisi, OH · K. Goodman, MI · S. Graber, IL · P. Grandsire, NY · B. Gursky, MI · E. Gutman, NY · K. Hamlett, TX · S. Harlock, MI · G. Hart, OH · R. Herwig, KS · J. Kaminski, MI · R. Kapielian, NJ · M. Kastner, OH · C. Kehr, MI · M. LaMarche, WA · J. Leitner, MI · R. Lezell, MI · M. Livernois, NC · B. Manne, FL · N. Mansour, MI · N. Markarian, CA · J.W. Mikesell, IL · G. Mosso, PA · E. Mosso, PA · E. Odenweller, OH · J. Paris, TX · D. Parris, GA · D. Peterson, MD · T. Pieper, WY · D. Pitak, MI · V. Plaisted, NY · D. Qualliotine, NC · C. Reed, MI · P. Sandvick, WI · K. Schwartz, FL · J. Shea, MO · B. Shumaker, NJ · B. Sims, NY · H. Tetelman, OH · C. Trubschenck, CA · P. Tu, CA · S. Ura, NH · W. Walcott, MI · L. Wee, MI · D. Wojtowicz, MI · M. Zahn, MI

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