

THE DENTAL ADVISOR

Improving Patient Care Through Research & Education

September 2016

Vol. 33, No. 07

INFECTION CONTROL:

Single Use & Reusable

Since the early 1980s, single use items have gained popularity in dentistry. Reusable devices are still used as well, and a focus on reprocessing of reusable items has been in the news recently. In this issue of THE DENTAL ADVISOR, we will discuss single use and reusable items.

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www.dentaladvisor.com

RATINGS :

Excellent + + + + +

Very Good + + + +

Good + + +

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2016

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It is not unusual during our infection control seminars to have questions asked concerning single-use disposable items. A progressive shift from reusable to single-use devices in dental healthcare settings continues as new generations of dental products are introduced into the marketplace. That is especially the case for those items replacing reusable items that cannot properly be cleaned and sterilized. This shift can be readily apparent with newer clinicians, who often do not realize that far fewer single-use items were available or used more than two decades ago when some of their more mature colleagues were already in practice. While single-use saliva ejectors and high-volume evacuation tips were available, other items such as single-use air/water syringe tips were not, nor were environmental surface barriers used. Up until a number of years ago, often offices and clinics were sterilizing and reusing air/water syringe tips hundreds of times. Many now have switched to using single-use disposable substitutes, which can offer personnel time, cost, and infection control advantages. This article discusses the rationale one may use when considering single-use and reusable items for patient care, representative product examples, and the potential for misuse.

— John A. Molinari, Ph.D., Fiona M. Collins, B.D.S., M.B.A., M.A. and Peri D. Nelson, B.S.

INFECTION CONTROL:

Under the Microscope

A close-up view of single use and reusable items

Every so often, we hear about potential health threats, some of which are highly relevant for the dental setting. The infection control breaches we hear about from time to time also increase awareness and raise concern.

For some dental devices the selection of a single-use or reusable device involves many factors; for others the choice is simple. The inability to properly reprocess devices combined with microbial challenges and time-consuming reprocessing have led to single-use designs.

Can the instrument or device be properly cleaned? If not, it cannot be rendered sterile or even properly disinfected. The importance of cleaning is demonstrated by the Food and Drug Administration's (FDA) recent guidance for manufacturers on reusable devices, which includes requiring validation on effective cleaning of these reusable devices. A greater focus has recently also been placed on methods of sterilization and reprocessing.



If there are **no instructions** listed for **reprocessing, discard** the item as it cannot be safely sterilized or disinfected.

If an instrument/device **cannot be cleaned** and properly reprocessed, then a **single-use, disposable device** must be used.

Items classified as "disposable" are characterized as **single-use** and intended to be used on **one patient**.



Single use or reusable?

For some types of devices, the answer is obvious – the device may be easy to properly clean and sterilize as well as expensive, or it may be inexpensive and difficult or impossible to clean. Recommendations may exist, and regulations dictate, that only single-use items be used. In other situations, for some devices with both single-use and reusable options, a more nuanced consideration is needed.

Single Use

VS

Reusable

- + Simple and eliminates the need for time-consuming reprocessing
- + Reduces risk of sharps injuries
- + Does not require use of any chemicals
- + No requirement for durability
- + Can be cost-effective for some devices
- Must be disposed of, increasing the amount of waste/trash
- Must not be reused as they cannot be reprocessed
- If inadvertently reused, risk of cross-contamination and failure
- Greater inventory requirements
- May be a greater expense

- + Reduces waste (more eco-friendly)
- + Reduces inventory requirements
- + Designed to be durable, lasting multiple sterilizations
- + Can be more cost effective, depending on device
- Time consuming to clean
- Risk of being improperly cleaned
- Unsuitable for instruments that cannot be cleaned
- Unsuitable for non-immersable/non-wettable items
- Unsuitable for critical and semi-critical instruments that cannot be heat sterilized
- Instrument/device may degrade over time

Single Use or Reusable? **Burs and Diamonds**

Does it make sense to reprocess burs and diamonds? These devices are very difficult to clean and reprocess properly, and studies have shown debris and contamination can remain on the cutting surfaces. Sharps injuries are an additional risk during reprocessing of some shapes of burs and diamonds. Another reality is that single-use, disposable burs sold as single-use are being reprocessed and reused. Companies now market single-use, disposable burs and diamonds that are less expensive and less durable, and should be discarded after a single use.

What we hear:

Single use burs and diamonds are used multiple times in practice.

What we advise:

Single use burs should be disposed of after a single use and are not designed to be durable for multiple uses.



Recommend: SINGLES (Meisinger)

SINGLES
Meisinger USA L.L.C.
www.meisingerusa.com



SINGLES Diamonds: **MEISINGER's Single Patient Use Diamonds**

are individually packaged and sterilized for immediate use, so the time consuming sterilization before use is no longer required. The synthetic diamond grain provides efficient and precise ablation, allowing for excellent working results. Each instrument is color coded, allowing for a quick visual for using the proper grain size.

SINGLES Carbides:

MEISINGER offers a large range of carbide instruments that are pre-sterilized and sterile packed, right out of the box. The innovative design is constructed to allow long lasting durability and remarkable cutting efficiency while greatly reducing cut vibration and breakage allowing for excellent working results. MEISINGER's "Singles" Pre-Sterilized and Sterile Packed Carbides are the same cost as our Multi-Use carbides, however they allow a procedure to be done quicker and more efficiently. MEISINGER's sterile packed carbides save doctors time and money because the time-consuming sterilization before first use is no longer required. MEISINGER "Singles" carbides and diamonds are individually packaged and sold in easy-to-dispense packaging containing 25 individually sterile packed burs.

Air water syringe tips

What we
hear:



Single-use, disposable air/water syringe (AWS) tips are now more widely used than reusable metal tips. Metal AWS tips are used intra-orally and therefore are semi-critical and require heat sterilization. AWS tips have narrow lumens that cannot be adequately cleaned before sterilization, as shown by THE DENTAL ADVISOR. Proteinaceous debris can therefore collect and accumulate, delaying and preventing penetration of air and water stream. Cold sterilants are also ineffective, and are contraindicated.

Single-use, disposable AWS tips: (**Flash Tips**, DENTSPLY Sirona; **Seal Tight**, Kerr TotalCare) solve this clinical problem.

Disposable tips often have loose fittings that can leak, and cross air and water connections can cause moisture in air lines.



What we advise:

Purchase disposable tips that have a tighter connection to the air water syringe. It is also important to monitor o-ring wear, as if it is compromised it can cause leakage.

- **Recommend:** Seal-Tight (Kerr TotalCare) and Flash Tips (DENTSPLY Sirona)



Environmental Surface Barriers

What we
hear:

An effective surface barrier is a material that prevents the penetration of microorganisms, particulates and fluids.

Barriers offer an infection control solution when it may be impossible or difficult to clean and disinfect contaminated surfaces with sprays or wipes. In studies performed at THE DENTAL ADVISOR, single-use disposable barriers specifically manufactured and FDA-cleared for patient care areas were shown to provide excellent protection from surface bacterial contamination. The use of a reliable, FDA-cleared protective surface barrier should be a component of every facility's infection control program (**Pinnacle Headrest Barriers**, Kerr TotalCare; **Pinnacle Arm Sleeve Barriers**, Kerr TotalCare).



We use dry cleaning bags to cover our chairs, X-ray device heads, and headrests.

What we advise:

Dry cleaning bags and trash bags are not FDA-cleared. In studies at THE DENTAL ADVISOR, it was shown that these do not offer adequate protection and are permeable. Choosing a reliable protective barrier provides far better protection from microbial contamination.

Recommend:

Pinnacle barriers
(Kerr TotalCare)



Saliva ejectors and HVE Tips

What we hear:

Saliva ejectors have narrow lumens.

HVE tips are wider, but it is still difficult to ensure they are clean if reused.

Therefore, single-use, disposable plastic HVE tips and saliva ejectors are recommended for use on a single patient before discarding. In particular, the **Safe-Flo Saliva Ejector** has a one-way safety valve. This was tested in the THE DENTAL ADVISOR microbiology laboratory, and found to prevent backflow of biological debris.



Saliva ejector valves and HVE valves are not sterilized between patients, and can often collect debris. Many offices inquire about how to minimize cross-contamination.

What we advise:

Carefully inspect valves, and replace valves that appear worn with newer, smoothly designed ones. The less crevices for potential contamination, the better.



Recommend: Safe-Flo Saliva Ejectors (RJC Products), Comfort Plus Premium Saliva Ejectors (Crosstex), M.A.S.S (Ghost Manufacturing) and Safe-Vac, (Safe-Vac, LLC)

How to Dispose of Single-Use Items

The majority of single-use disposable items can be discarded in the regular trash. However, some items meet the OSHA definition of regulated medical waste and need to be discarded in special containers. For example, needles, scalpel blades, and any other sharp items must be disposed of in sharps containers. Any disposable items, such as gauze or cotton rolls, that would release blood, saliva or other potentially infectious material (OPIM) if squeezed or compressed, or that are caked with dried blood, saliva or OPIM, must be disposed of in a biohazard bag. In addition to the federal regulations regarding regulated waste, dental personnel should be familiar with and adhere to their local and state regulations.



Masks



Masks provide protection for the user and patient.

They are rated based on their ability to prevent penetration of microorganisms, particles and fluid; breathability; and, flame resistance. Masks are single-use, disposable. Once used, they are contaminated and should be discarded and replaced. If they are damp, they are ineffective because of wicking, and should be discarded and replaced.

ASTM Level 1
(low level of fluid, splatter, aerosol)

ASTM Level 2
(moderate level of fluid, splatter, aerosol)

ASTM Level 3
(high level of fluid, splatter, aerosol)

Examples of procedures:
Examination, impressions, operatory clean-up, instrument processing, orthodontics

Examples of procedures:
Endodontics, prophylaxis, sealants, some oral surgery and restorative procedures

Examples of procedures:
Ultrasonic scaling, restorative procedures, complex surgery

What we hear:

Our office purchases unrated masks because they are less expensive.

What we advise:

Masks with ASTM ratings have been tested for their effectiveness. The ratings also guide the user on which mask to use depending on the procedure/circumstances. With unrated masks, you simply do not know if they are effective or how effective.



Recommend: SecureFit (Crosstex), Comfit (DENTSPLY Sirona) and Repel (Cranberry USA).



98%
overall
rating

sagemax

www.sagemax.com

Purpose:

The purpose was to determine the clinical performance of **NexxZr T** full-contour zirconia restorations at three years or more after cementation.

Clinical Evaluation Protocol:

A total of 475 **NexxZr T** full-contour zirconia crowns and bridges were placed over the past five years. At three years, 370 restorations were recalled including: single crowns, implant crowns, splinted crowns, and 3- and 4-unit bridges (Figure 1). Two percent of the recalled restorations were anterior crowns and 98% were posterior crowns.

The restorations were cemented with adhesive resin or self-adhesive resin cements. The majority of the restorations recalled at three years were fabricated by Apex Dental Milling, Ann Arbor, Michigan. Of the 370 recalled restorations, 2% were over 4 years, 55% were between 3 and 4 years, 26% were between 2 and 3 years and the remaining 17% were less than 2 years old (Figure 2).



Teeth #28 and #29 with NexxZr T restorations.

Results at 3 years:

Lack of Sensitivity

Lack of sensitivity was excellent (Figure 3). Over a three-year period, eleven patients experienced minor to moderate postoperative sensitivity that subsided within three months after placement. Ninety-five percent of the restorations were reported to be comfortable.

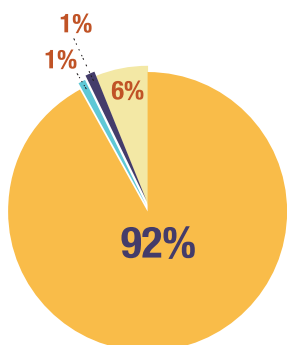
Esthetics

The esthetics of **NexxZr T** restorations also received excellent ratings (Figure 3). Beyond three years in service, 95% of the restorations exhibited shades and surface textures analogous to when the restorations were initially placed. Only 5% of restorations received a rating of 4 (very good) based on slightly lower esthetics. Full-contour zirconia crowns are more monochromatic than layered ceramic restorations; however, this is often an asset in the posterior region where discolored stump shades can be a challenge. Ninety-five percent of the crowns and bridges maintained excellent esthetics.

Resistance to Fracture/Chipping

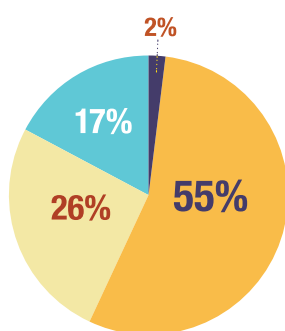
The strength and durability of full-contour zirconia restorations make them ideal for the posterior region as chipping and fracture are very rare. Less than 1% of the **NexxZr T** restorations received ratings less than a 5 (Figure 3). One posterior crown chipped at the margin but did not require replacement. Three additional restorations were likely compromised by endodontic treatment, which later necessitated their replacement.

Fig. 1: Types of Restorations Evaluated at Three Years.



Single crowns
Implant crowns
Splinted crowns
3- and 4-unit bridges

Fig. 2: Age of Restorations Evaluated at Recall.



Over 4 years
3-4 years
2-3 years
less than 2 years

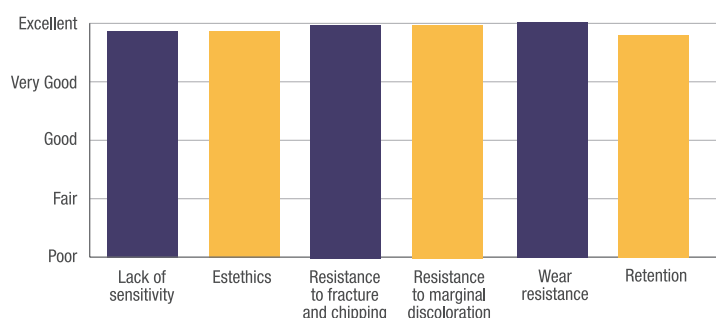
Resistance to Marginal Discoloration

Resistance to marginal discoloration was excellent, with only five restorations exhibiting any marginal staining (Figure 3). While the opacity of full-contour zirconia restorations provides excellent coverage of discolored teeth, it may hide some of the marginal discoloration typically resulting from the bonding agent or cement. Ninety-nine percent of the **NexxZr T** restorations received excellent ratings after three years.

Wear Resistance

Wear resistance was excellent (Figure 3). There was almost no evidence of wear on the restorations or opposing teeth. For patients with severe bruxism or those where minimal clearance can be achieved, **NexxZr T** crowns are an excellent choice.

Fig. 3: Ratings of NexxZr T restorations at three-year recall



Retention

Seventeen of the 370 restorations recalled debonded over the three-year recall period. The debonded restorations were single crowns on molars and were recemented successfully. In the posterior region where bruxism, minimal remaining tooth structure and isolation are often challenges, 95% retention is excellent (Figure 3).

Consultants' Comments

- "I've been using NexxZr for over 3 years and it has been a very reliable material with no failures and excellent aesthetics. Patients have been very pleased as well."
- "It's easy to see why NexxZr T is one of our best selling zirconias. With its exceptional translucency, strength and depth of color, it can be used as a multiple unit bridge or an aesthetically pleasing anterior crown."

— Apex Dental Milling

Summary

The three-year recall proved **NexxZr T** to be an excellent full-contour zirconia with excellent resistance to fracture and chipping fracture and dependable esthetics and retention. **NexxZr T** received a 98% clinical performance rating.

THE DENTAL ADVISOR Upcoming lectures

■ **Friday September 23, 2016:** Dr. Sabiha Bunek
Using Modern Material Science and Technology to Enhance Restorative Success for Indirect Restorations

Delta Dental Foundation Lecture, Traverse City, MI



■ **Friday, October 7, 2016:** Dr. Sabiha Bunek
Using Modern Material Science and Technology to Enhance Restorative Success for Indirect Restorations

CEREC Doctors Mentor Meeting, Scottsdale, AZ

■ **Wednesday, October 12, 2016:** Peri Nelson
Dental Unit Waterlines: Facts vs. Myths
THE DENTAL ADVISOR Education Center, Ann Arbor, MI



■ **Friday, November 11, 2016:** Dr. Julius Bunek
Managing & Preventing Implant Complications: A Team Approach
Wichita District Dental Society, Wichita, KS



■ **Winter, 2017:** Dr. John Molinari
What's Bugging The Dentist: A Hands-On Infection Control Workshop
Presented at 2017 Yankee Dental Meeting, Boston, MA, and Chicago Midwinter Meetings



■ **Friday, February 10, 2017:** Dr. Fiona Collins
Infection Prevention: Keeping You and Your Patients Safe
Wichita District Dental Society, Wichita, KS



■ **Friday, March 3, 2017:** Dr. Sabiha Bunek
Digital vs. Traditional Impressions and Cementation and Bonding for Ceramics
Wichita District Dental Society, Wichita, KS



86%
overall
rating

GC America, Inc.

800.323.7063 - 708.597.0900

www.gcamerica.com

Suggested Retail Cost

per 48mL cartridge	\$168. ⁰⁰
per 10mL cartridge	\$84.25. ⁰⁰

Description

TEMPSMART is a dual-cured provisional material designed for strength, wear resistance, and a quick set time. It can be used in a lab-fabricated, thermoforming matrix or directly in an alginate or silicone impression. The temporary restoration can be fabricated in the mouth or on the model. **TEMPSMART** has a working time of 45 seconds and should be removed from the mouth within two minutes. It may be tack-cured for two seconds before removal. The restoration should be removed from the mouth for a final cure of 5 seconds for each unit. **TEMPSMART** is supplied in a 48 mL automix cartridge with 16 mixing tips, as well as a 10 mL cartridge syringe with 10 mixing tips. The A2 shade was evaluated by 25 consultants in 370 uses. This provisional material received an 86% clinical rating.

Consultants' Comments

- "The material was able to capture fine detail, especially deep interproximal margins."
- "Margins can be finished with no chipping."
- "No bubbles."
- "Strong, fracture resistant temporary crowns."
- "Fast setting time."

Clinical Tips

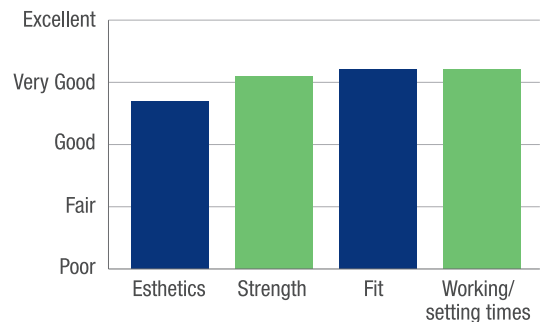
- Use a clear matrix material to allow light curing.
- Undercuts should be blocked out on the matrix or impression as well as the preparation and adjacent teeth.
- Prepared teeth and/or core may be lubricated with a separating medium such as Vaseline.
- After final cure, completely remove oxygen inhibition layer from the surface of the temporary restoration with alcohol.



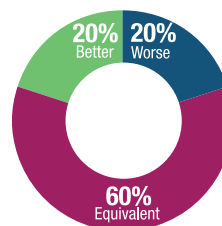
Product Features

TEMPSMART was strong and resistant to chipping, even in thin areas. The working and setting times were ideal, and the option of light curing allowed the users to proceed at a faster pace, if desired. Although a separating medium was recommended, many consultants simply left the teeth moist with saliva and did not experience any sticking of the provisional material to the teeth or cores. **TEMPSMART** when cured was slightly opaque, which should be considered when fabricating provisional restorations in the esthetic zone. The strength makes it ideal for bridges and long-term temporization.

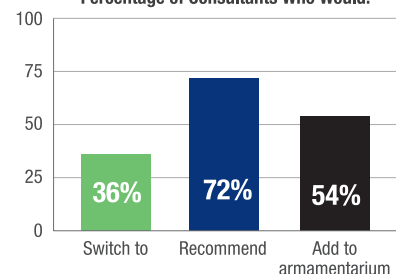
Key Features:



Compared to Competitive Products:



Percentage of Consultants Who Would:



Aura Bulk Fill

++++ 1/2

94%
overall
rating

SDI Inc.
www.sdi.com.au



Description

Aura Bulk Fill is a nanohybrid composite designed for filling posterior teeth in a single layer. The Ultra High Density (UHD) glass filler provides a high-strength interface that can withstand high compressive forces while still delivering excellent handling and polishing properties.

Unique Features

Aura Bulk Fill offers a 5 mm depth of cure and one universal shade to simplify posterior composite placement.

Consultants' Comments

- "I can finish most of my posterior restorations in a single layer because of the deep curing."
- "Easy to extrude and handling is amazing."
- "The universal shade is really just that. I did not expect the color to blend with most teeth, but it did!"
- "Capsules of composite come in a handy box with a magnetic closure."

Clinical Evaluation Results

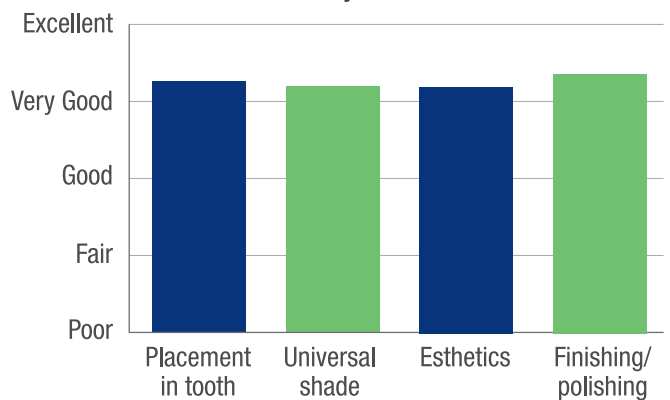
- **Aura Bulk Fill** was evaluated by 33 consultants in 657 uses.
- The composite handles well, adapting to cavity walls and allowing sculpting without sticking to the instrument.
- The single, universal shade approximates A2 and blends well with surrounding enamel.
- Options of two extra shades were requested by some consultants.



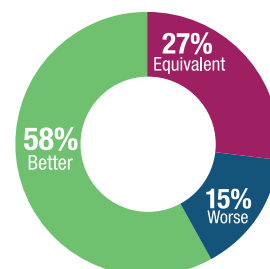
Results from THE DENTAL ADVISOR Biomaterials Research Laboratory

- Gloss after polishing 83 (2) gloss units
- Radiopacity 2.9 (0.1) mm of aluminum per mm of material
- Depth of cure (20 s) 7.3 mm
- Depth of cure (40 s) 8.9 mm

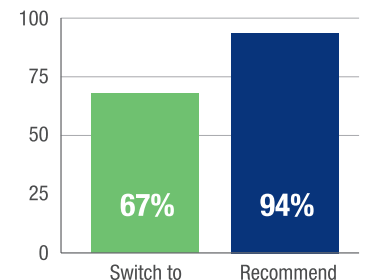
Key Features:



Compared to Competitive Products:



Percentage of Consultants Who Would:





91% overall rating

Whole You, Inc.
www.wholeyou.com/oral/dental-solutions

Suggested Retail Cost	
Whole You Starter Kit (one kit has supplies for 8 denture cases)	\$100.00
Whole You Denture CP (complete case — maxillary and mandibular)	\$650.00

Description

Whole You offers full denture solutions incorporating patented impression trays, DENTCA Inc.'s denture modeling software, and, in the case of its milled denture option, proprietary materials to allow practitioners to deliver full denture cases in two or three appointments. No CAD/CAM equipment is required in the operatory, only Whole You DENTCA Impression Trays. The impression trays come in small, medium, large and extra-large sizes, and allow for the capture of vertical dimension (VD) and centric relation (CR) in the first appointment. Whole You Nexteeth Starter Kits include two Whole You DENTCA Impression Trays of each size, one Whole You Lip Ruler, one Whole You Jaw Gauge, eight Whole You EZ Tracers and several attachments for single arch cases. The record-taking technique involves maxillary and/or mandibular impressions being made using heavy- and light-body polyvinyl siloxane (PVS) impression materials. Recording VD and CR is made possible by the detachable posteriors of the Whole You Dentca Impression Trays and attachable center pin. Cases are ordered at ordernexteeth.wholeyou.com, where the tooth shade and other prescription-related information is submitted. Once the physical records are received and scanned by Whole You, DENTCA digitally models the case so Whole You can produce the 3D printed try-in; this requires five to seven business days. Once the try-in is either approved or adjusted by the practitioner, the final dentures are processed in seven to ten business days. Whole You offers two types of digital dentures: Whole You Nexteeth and Whole You Denture CP. Whole You Nexteeth, the company's flagship denture, is milled from a proprietary polymethyl methacrylate (PMMA) and offers a very accurate fit, a thin palate, durability and also easy cleaning, thanks to a highly effective coating. Whole You Denture CP is fabricated with a proprietary conversion process utilizing a 3D printed model and also offers an accurate fit. Whole You Denture CP was evaluated by eight consultants in 18 patient cases. This digital denture solution received a 91% clinical rating. Note: Whole You Nexteeth was not available at the time of evaluation.

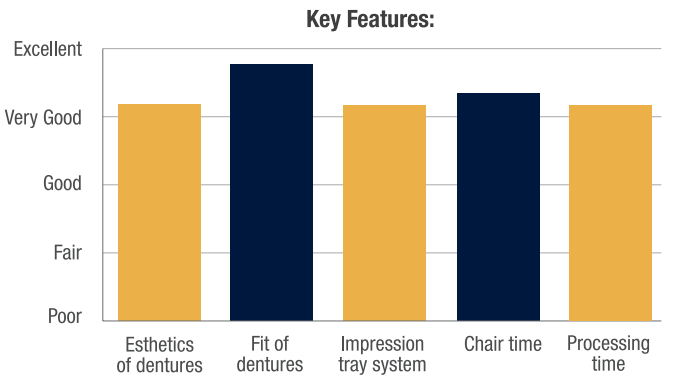


Clinical Tip

- Although optional, provide (upload) photos whenever possible to best relay requests.

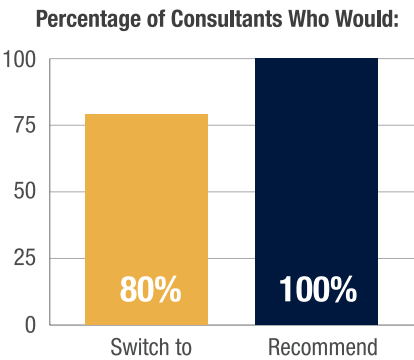
Unique Features

Whole You Denture CP delivers an exceptional fit with very good esthetics. DENTCA's software accurately determined functional aspects as well as esthetic features such as tooth size and midline. On average, the system eliminates two patient visits. The trays come in a variety of sizes and are moldable with flame and the impression technique is specific, but familiar. Registration of VD and CR requires learning a new technique — a booklet included with the kit and online videos are very helpful with these steps. Adjustments made on the try-in are translated to the final dentures. A significant benefit for patients is the digital records, allowing easy duplicates and replacements.



Consultants' Comments

- "Rapid completion of a quality denture."
- "Impression and bite relations at the same visit saves time."
- "Easy to take impression."
- "Establishing vertical was very easy even for inexperienced operators."
- "Tooth selection and position was very good."
- "Very precise impression technique led to great fit."
- "The optional try-in is solid white. It does not allow for evaluation of tooth shade."
- "The try-in does not come mounted, so it does not provide the same verification of occlusion as traditional techniques."
- "Tray can tip during bite registration. Center pin should be more stable." **Editor's note:** Whole You DENTCA Trays have since been reengineered to add more stability during bite registration by repositioning the center bearing pin.
- "Impression trays would be easier to use if they had handles."
- "I would love to have access to the design software to digitally move the teeth - as in orthodontic software."



Futurabond U

+++++



96%
overall
rating

VOCO

www.voco.com

Description

Futurabond U is a universal bonding agent that can be used for all etching techniques as well as for all curing techniques with self-, light- and dual-curing direct and indirect resin materials. No additional activators or primers are required. **Futurabond U** is reinforced with silicon dioxide nanoparticles that reinforce the hybrid layer to provide a durable, high bond strength. It is applied and rubbed in a single layer for 20 seconds, followed by 5 seconds of air drying and curing for 10 seconds. **Futurabond U** is delivered in unit-dose packaging for convenient, contamination-free application and does not require refrigeration. The single dose delivery system prohibits the evaporation of the solvent as experienced in bottle systems.

Consultants' Comments

- "The unit dose packaging is super easy to use."
- "The single dose delivery prevents evaporation."
- "The film thickness is very thin, and the film really adheres to the tooth."
- "The packaging is the best in the industry. I love that it is dual-cure compatible without any additional materials needing to be added, such as an activator."
- "It is a very nice bonding agent. It has a nice texture and consistency, and it goes on evenly and gives a good bond for sealants and composites. Margins looked excellent."
- "I like the simplicity of system, and the reduction of waste and reservoir leakage."

Clinical Tips

- "When air drying, be careful that the material is not getting onto the soft tissues."
- "Make sure you push all the activator liquid through to the adhesive."
- "Make sure it is thoroughly mixed so that all the "swirl marks" are gone."



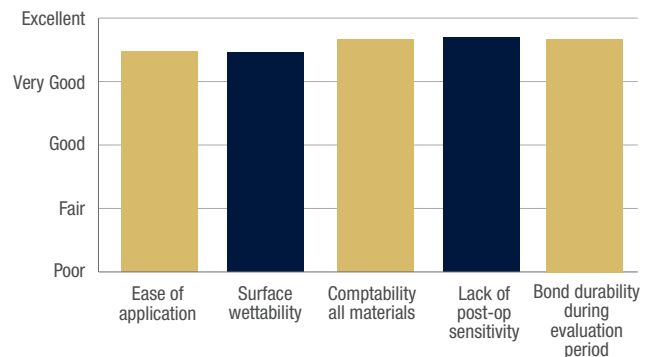
Evaluation Highlights

Futurabond U was evaluated by 30 consultants, with an average of 28 uses per consultant. It received a 96% clinical rating.

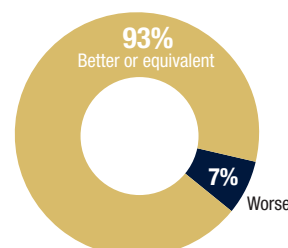
Observations

- "I would change the packaging into individual containers in hard plastic that stand on the tray on their own. Otherwise, I loved the product."
- "Smaller packaging would be nice. Slightly more bonding agent in the unit dose (if doing more than one restoration, as there is currently only bonding agent enough for one large restoration)."
- "We observed almost no sensitivity."

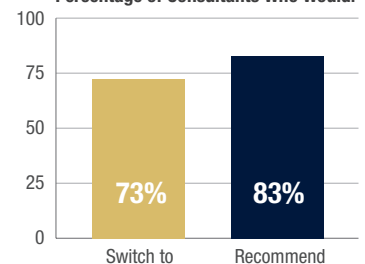
Key Features:



Compared to Competitive Products:



Percentage of Consultants Who Would:



Beyond Polus Advanced

+++++



97%
overall
rating

BEYOND® International Inc.
www.beyonddent.com

Description

BEYOND® Polus Advanced is an in-office whitening system consisting of the **BEYOND Polus Advanced** Whitening Accelerator and whitening gel. The Whitening Accelerator can be used for full arch whitening procedures or for spot whitening on individual teeth. **BEYOND Polus Advanced** has a built-in curing light with 3 settings (low, medium and high) and a motorized arm to adjust its height and that can be rotated 360°. A touch screen monitor with the *Touch User Interface* (TUI) panel lets the operator customize the settings and height for each patient. To prevent heat generation, **BEYOND Polus Advanced** is designed with temperature monitoring and an advanced filtration system that removes heat and UV output. It also comes with a wireless remote control with a patient call button.

Indications

- Full-arch whitening procedures
- Spot whitening of individual teeth

Consultants' Comments

- "Receiving a 3-minute warning that time is almost up is very helpful."
- "The unit and display have a sleek appearance. It's easy to store between uses, and comes with a custom, fitted cover."

Clinical Tips

- Wrap the cord around the folded arm when moving the unit. This will prevent the arm from dropping down while you are moving it.
- Plan on getting it ready before you seat your patient. This saves time once the patient is in your chair.

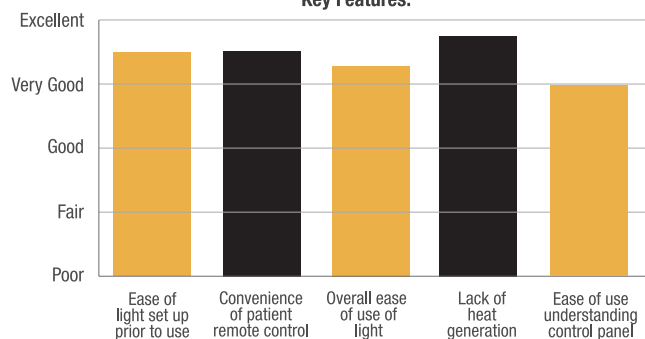


Evaluation Highlights

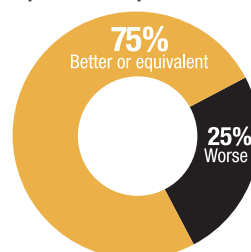
BEYOND Polus Advanced was evaluated by 4 consultants, with an average of 14 uses per consultant.

- This system whitens well.
- No heat is emitted from the light.
- Make sure the arm is stable before you use it, as the arm can easily drop.
- The control screen has rather a lot of options.
- The arm could use a small part to further stabilize it into position.
- The built-in filtration system is an attractive feature.

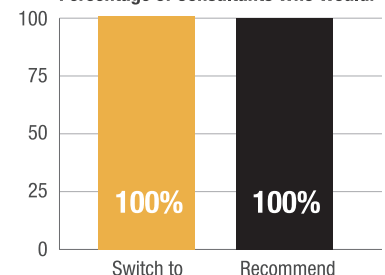
Key Features:



Compared to Competitive Products:



Percentage of Consultants Who Would:



Elements Free Obturation System

+++++



96%
overall
rating

Kerr Corporation
www.kerrdental.com

Description

Elements Free Obturation System is a cordless, battery-operated version of the original Elements Obturation System. It consists of a Downpack and motorized Backfill unit, utilizes the continuous wave obturation technique and is designed for use with the warm vertical condensation technique. The Downpack heats to 200°C in less than 0.5 seconds and has an adjustable heating range of 100 – 400°C, and extrusion of gutta percha is automated. A 360° one-touch activation/deactivation ring heats the plugger, and cartridges are single use.



Consultants' Comments

- "It is light, cordless and does exactly what you want it to."
- "Love this system and it is even greater in that it is lighter and cordless."
- "Portable, lightweight, and heats quickly. I also like the one-touch activation/deactivation ring."
- "Warming tip is convenient."
- "Produces great fills."
- "Could not hear the beep from the unit indicating the heating time within the canal."
- "It takes longer to heat up than the corded version."

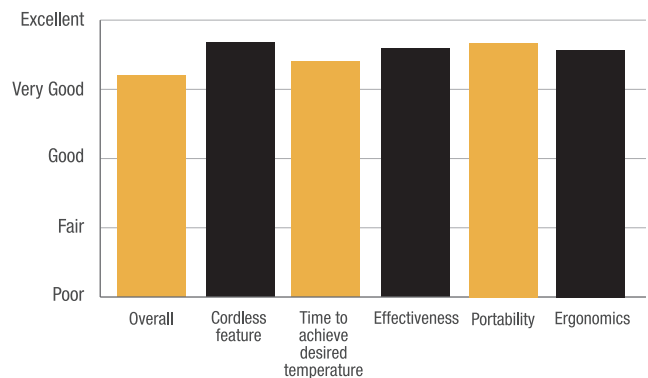
Clinical Tips

- "Have your assistant start the backfill unit while you are using the Downpack heated plugger."
- "Carefully bend the tip of the gutta percha tip to fit it into hard-to-reach canals."
- "Ensure you have the correct hand plugger to correspond to the Downpack tip."

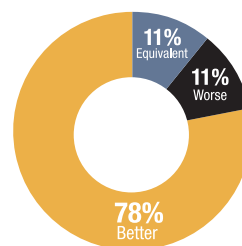
Evaluation Highlights

The Elements Free Obturation System was evaluated by 9 consultants, with an average of 17 uses per consultant. It received a 96% clinical rating.

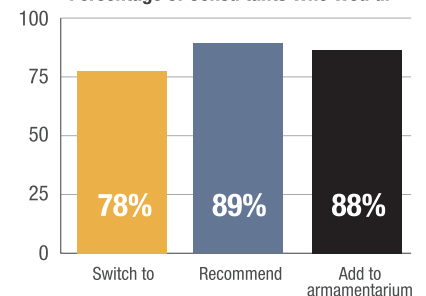
Key Features:



Compared to Competitive Products:



Percentage of Consultants Who Would:



87%
overall
rating

Danville Materials
www.danvillematerials.com

Description

BulkEZ is a dual-cured, bulk-fill posterior composite that is placed like a flowable composite and is compatible with any adhesive system. BulkEZ is available in shades A1, A2, and A3. Working time in the mouth is 40 seconds and setting time is 65 seconds. Light curing for 10 seconds is recommended after initial setting has occurred. **BulkEZ** is supplied in a 6 mL automix syringe; mixing tips have needle tip extensions in 17- and 19-gauge sizes.

Indications

- Posterior restorations, Class I and II
- Cavity Liner
- Core Build-up and post cementation

Unique Features

BulkEZ is one of the few dual-cure posterior composites available, allowing unlimited depth of cure. This feature ensures complete polymerization in areas the curing light may not reach.

Consultants' Comments

- "It is reassuring to know that the restorative material is fully cured. With light-cured materials, sometimes I wonder."
- "Placing large fillings in a single layer saves time."
- "Matrix has to be adapted well to get a good proximal contact since there is no ability to pack the material."

Clinical Tips

- Allow the material to set before light curing. This will optimize the shrinkage characteristics, minimizing the chance of post-operative sensitivity and microleakage.
- It sets very fast, which is good for a single restoration. Plan on using a new mixing tip for each tooth.

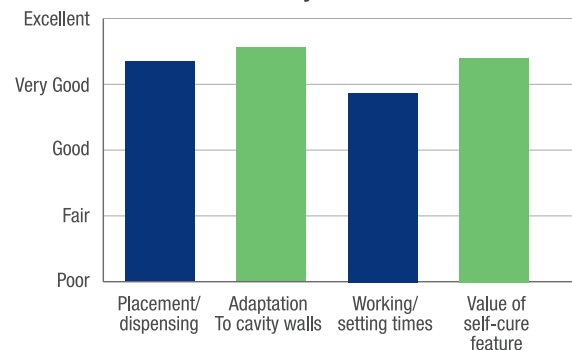


Evaluation Highlights

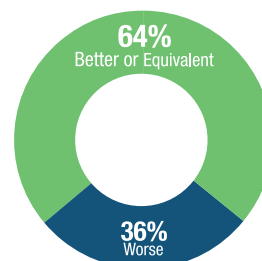
BulkEZ was evaluated by 25 consultants in 452 uses.

- The flowable nature of the composite has good wetting and adapts well to the prepared surfaces.
- Setting time is very fast.
- Finished restorations have great radiopacity.
- The long needle tips can be bent to the desired angle and allow good access to posterior teeth, even fitting into narrow areas.
- The three shades are adequate for most posterior teeth.

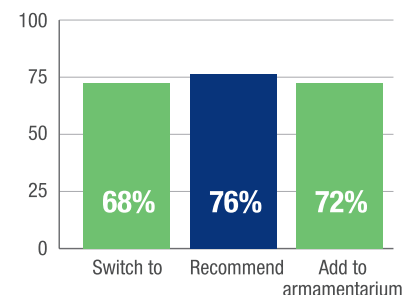
Key Features:



Compared to Competitive Products:



Percentage of Consultants Who Would:



Sof-Lex Diamond Polishing System

++++ 1/2

93%
overall
rating

3M

www.3M.com/SofLex

Description

The **Sof-Lex™ Diamond Polishing System** offers a fast, paste-free method to polish restorations. The beige rubberized pre-polishing spiral is impregnated with aluminum oxide to remove scratches and smooth the surface of teeth. Final polishing is achieved with the pink rubberized polishing spiral that is impregnated with diamond particles to create a high-gloss polish. The polishers are snap-on and flexible for adaptation to all tooth surfaces. Adding water is recommended during use to optimize results and prolong tool life. The spirals and mandrels are multi-use and autoclavable.

Consultants' Comments

- "Great product, I will buy this one to have in my office."
- "Easy to use and flexible."
- "Smooth, high gloss finish."
- "These are the best way to polish occlusal surfaces once the anatomical contours are placed and finished."
- "You are able to polish into anatomy you have created without polishing the anatomy away."
- "Excellent polisher for buccal surfaces."
- "Nice product... especially like the diamond spirals."
- "Great that they can be autoclaved."

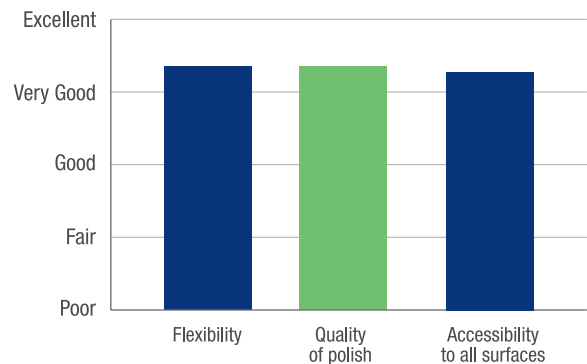


Evaluation Highlights

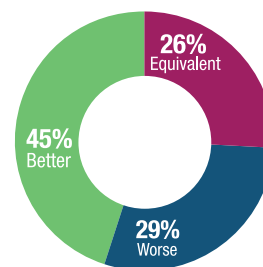
The **Sof-Lex™ Diamond Polishing System** was evaluated by 31 consultants, with an average of 22 uses per consultant.

- "Great for polishing provisional crowns as well as composites."
- "Fits well into interproximal areas without cutting soft tissue."
- "After autoclaving, discs did not stay on mandrel as well."

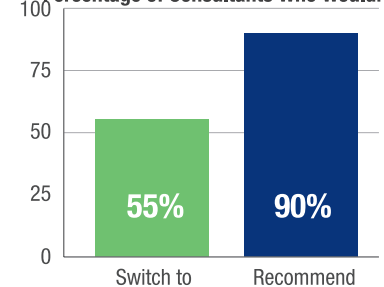
Key Features:



Compared to Competitive Products:



Percentage of Consultants Who Would:



THE DENTAL
ADVISOR

Did you know?

Many products reported on in THE DENTAL ADVISOR have free samples available for our readers. To sample products, go to the article and look for this icon, or go to www.dentaladvisor.com/clinical-evaluations and view a list of samples available.



Order Samples

Q-Ceram

BJM Lab

www.bjmlabs.com

93%
overall
rating

++++ 1/2

Description

Q-CERAM is a one-bottle primer/surface conditioner indicated for ceramic materials, including porcelain and zirconia, and is applied to the inner surface (intaglio) of ceramic crowns, veneers and inlays. It is formulated to improve bond strength to resin-based cements, without the need for sand blasting or other conditioning. After cleaning the ceramic surface with alcohol and drying it with oil-free air, **Q-CERAM** is applied liberally. Its low viscosity and wettability help it flow and coat the surface. The primer is left on the surface undisturbed for 2 minutes, before drying it gently for 20 seconds with oil-free air and then proceeding with bonding. **Q-CERAM** comes with a mixing well, microbrushes and a laminated procedure card. This primer can also be used to prepare fractured ceramic crowns prior to repair.



Consultants' Comments

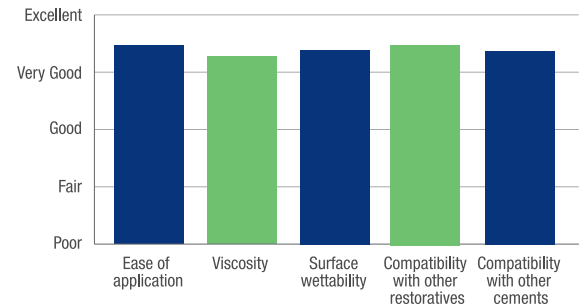
- "Q-CERAM is very simple to use."
- "A simple and easy product that is well worth the additional time."
- "Make sure to leave it on the surface for an adequate time and let it dry."
- "If it actually improves bonding, then I would rate it higher and switch."
- "Waiting for 2 minutes is too long."

Evaluation Highlights

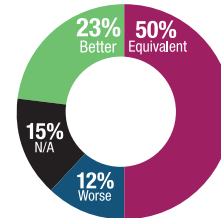
Q-CERAM was evaluated by 26 consultants, with an average of 17 uses per consultant.

- "Only dispense the primer when you are ready to use it as it evaporates quickly."
- "Other primers do not need two minutes and then drying for 20 seconds. This might play a part in a decision to switch or recommend."
- "Clearer instructions that no etching is required would be good."
- "The bottle could be a little easier to dispense drops - my assistant often poured too much out."
- "If the primer were a bit more fluid, it would be easier to use it with a microbrush."
- "Need to see research comparing it to other materials."

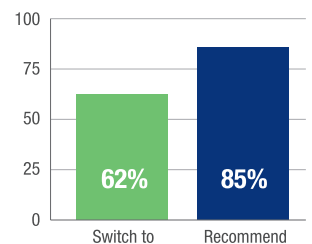
Key Features:



Compared to Competitive Products:



Percentage of Consultants Who Would:



THE DENTAL ADVISOR

A CONSULTANT BIDS FAREWELL . . .

Just a note to let you know that I am finally going into full retirement. I have enjoyed working over the many years with THE DENTAL ADVISOR. It has been an honor to share the clinical experiences and I have personally benefitted from the up-to-date information that your company has given in your publication. I don't know how today's dentist could keep up with the best for their patients without your research. There is a "time for sowing and a time for reaping." I have enjoyed the practice of dentistry since 1971. I just hope our profession can continue to put the welfare and health of the patients first. Sometimes, excellence in dentistry takes more time, energy and money than most folks are willing to commit. Hopefully you and your staff will continue to point in that direction of excellence. GO BLUE!

—Warm Personal Regards, Mel Livernois, D.D.S.

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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):

K. Baker, TX · F. Berman, PA · J. Bostic, OH · L. Brimhall, MT · M. Briskin, NY · L. Brown, MI · W. Brownscombe, MI · R. Ciccone, MI · C. Colbert, MI · M. Conrad, PA · J. Dingman, WI · R. Dost, VA · J. Doueck, NY · M. Dwoskin, MI · M. Eannaccone, NY · R. Engle, IL · K. Fairbanks, MI · M. Feinberg, NY · K. Fischer, IN · G. Franco, NY · N. Garlisi, OH · K. Goodman, MI · S. Graber, IL · P. Grandsire, NY · E. Gutman, NY · D. Haas, Ontario · K. Hamlett, TX · S. Harlock, MI · G. Hart, OH · R. Herwig, KS · J. Kaminski, MI · R. Kaprielian, NJ · M. Kastner, OH · D. Keren, NY · M. LaMarche, WA · J. Leitner, MI · S. Lever, MD · R. Lezell, MI · M. Livernois, NC · M. Man, NY · B. Manne, FL · N. Mansour, MI · N. Markarian, CA · C. McLaren, MI · J.W. Mikesell, IL · R. Mizrahi, NY · G. Mosso, PA · E. Mosso, PA · J. Nash, MI · A. Nazarian, MI · E. Odenweller, OH · R. Oshrain, NY · J. Paris, TX · D. Parris, GA · M. Patel, MI · D. Peterson, MD · T. Pieper, WY · D. Pitak, MI · V. Plaisted, NY · D. Qualliotine, NC · G. Raichelson, Ontario · C. Reed, MI · G. Reskakis, NY · K. Schwartz, FL · J. Shea, MO · B. Shumaker, NJ · B. Sims, NY · P. Symeonides, NY · H. Tetelman, OH · C. Trubschenck, CA · S. Ura, NH · W. Walcott, MI · M. Waranowicz, MI · L. Wee, MI · D. Wojtowicz, MI · H. Yeung, CA · M. Zahn, MI · P. Zanetti, MI · S. Zimmer, MI

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