

THE DENTAL ADVISORTM

"Improved Patient Care Through Research"



Photography by Gloria G. Poy, R.N., D.A., Harland, Michigan

Preventive Agents

The National Health and Nutrition Examination Survey (NHANES III 1988-1994) indicated that 94% of adults had evidence of treated or untreated coronal caries. In addition, about 25% of adolescents suffer 75% of the caries, demonstrating the ever-present need for caries prevention. Recent declines in untreated caries have been attributed to a shift from restorative to preventive dental care. Preventive adjuncts may include fluoridation of water, toothpastes and rinses, and an increased emphasis on oral health.

This issue of THE DENTAL ADVISOR includes a review of preventive adjuncts and power toothbrushes. Preventive materials discussed include fluoride and fluoride varnishes, chlorhexidine, xylitol, and **Recaldent**. Characteristics of 36 products are reported and protocols for treatment are reviewed. Various characteristics of 15 power toothbrushes are also described.

2004

Vol. 21, No. 10
December

PREVENTIVE AGENTS 2

POWER TOOTHBRUSHES 6

CLINICAL EVALUATIONS

5-YEAR CLINICAL PERFORMANCE

Alert 8
(Packable composite)

EXABITE II NDS 9
(Bite registration material)

Silkcare Powder Free Latex Gloves 9

1-YEAR CLINICAL PERFORMANCE

3M ESPE Lava Crowns and Bridges ...10
(CAD/CAM system)

Multilink 11
(Adhesive resin cement)

4 Seasons Flow 12
(Flowable composite)

bluephase 12
(LED light-curing unit)

Fiber-Splint ML 13
(Fiberglass splinting ribbon)

2-YEAR CLINICAL PERFORMANCE

Palfique Estelite 14
(Microfilled composite)

EDITORS' CHOICE

PRODUCT

P2 15
(Impression material)

EQUIPMENT

ZOOM! Chairside Whitening System ...16

WHAT'S NEW?

Palfique Estelite Sigma 15
(Universal composite)

Ratings

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

Preventive Agents

continued from page 3

Recaldent

Research on **Recaldent** has been done since the early 1980s at the University of Melbourne. It was approved by the FDA for use in chewing gum in early 1999. **PROSPEC MI Paste** is a polishing and desensitizing paste containing **Recaldent**.

It is designed to promote remineralization of tooth structure. **Recaldent** contains casein phosphopeptides and amorphous calcium phosphate (CPP-ACP). The CPP binds calcium and phosphate to keep them soluble and available for remineralization at the tooth surface. Benefits of **Recaldent** may be similar to xylitol-containing gum.

Protocols for Treatment

Target high-risk patients with chemotherapeutic treatment, plaque control, diet management and more frequent recall.

21st-century Preventive Model

- Provisional diagnosis and risk assessment
- Determine caries activity over time
- Remineralize non-cavitated enamel lesions
- Restore only cavitated lesions

High-risk Medical Protocol

- Oral health instruction, disease education
- Sealants for retentive pits and fissures
- Chlorhexidine – 15-ml rinse two times daily for two weeks after caries control and removal of all foci of infection
- Fluoride – one high-fluoride application at home once a day (5000 ppm NaF) or 2-4 in-office treatments in 2-4 weeks
- Xylitol – two pieces of gum chewed within 20-40 minutes four times a day. Xylitol chewing gum can be recommended for all patients.
- **Recaldent** – Apply to teeth (**PROSPEC MI Paste**) after prophylaxis or daily after brushing. Chewing gum containing **Recaldent** can be recommended.

Conclusions

- Caries incidence continues to decline, with a small part of the population harboring the majority of decay.
- There has been a shift from a surgical to a medical model of caries management.
- Caries-risk assessment of patients is necessary to provide the most appropriate, individualized treatment.
- Technological advances will continue to redefine the meaning of minimally-invasive dentistry.
- Use of preventive adjuncts including fluorides, chlorhexidine, xylitol, **Recaldent**, and saliva substitutes are consistent with a medical model of caries management. ■

Other Featured Products



PROSPEC MI Paste
(GC America)

Product	Company	Type	Contents	Flavors Available	Other	Cost
Fluoride Gel/Topical						
2% Neutral Gel	Biotrol	2% Sodium Neutral Fluoride	17.5-oz bottle	Peppermint Stick, Wild Berry, *Vanilla Orange, *Cool Mint, *Pink Bubblegum, *Strawberry Delight (*clear)		\$20.50/bottle
ALLSolutions® Fluoride Foam	DENTSPLY Professional	1.23% APF	8.45-fl oz bottle	Mint, Berry Cherry		\$31.15/bottle
ALLSolutions® Fluoride Foam	DENTSPLY Professional	2.0% NSF	8.45-fl oz bottle	Peach, Mint		\$31.15/bottle
ALLSolutions® Fluoride Gel	DENTSPLY Professional	1.23% APF	12-fl oz bottle	Wild Cherry, Bubble Gum		\$22.45/bottle
ALLSolutions® Fluoride Gel	DENTSPLY Professional	2.0% NSF	12-fl oz bottle	Mandarin Orange, Mint, Apple Cinnamon		\$22.45/bottle
Denti-Care	Medicom	1.23% APF	16.2-oz bottle	Bubblegum, Grape, Cherry, Strawberry, Orange, Mint	Fast acting results due to low pH	\$16.00/bottle
Denti-Foam	Medicom	1.23% APF	4.4-oz can	Bubblegum, Grape, Cherry, Strawberry, Orange, Mint		\$33.00/can
Gel-Tin	Young Dental	0.4% Stannous Fluoride Gel	120-g tube	Grape, Raspberry, Mint, Cinnamon, Orange, Lime		\$4.89/tube
Perfect Choice APF Foam	Biotrol	1.23% APF Foam	7.4-oz can	Cherry, Caramel, Strawberry Colada, Tropical Fruit, Cotton Candy, Cream Mint		\$30.75/can
Perfect Choice APF Gel	Biotrol	1.23% APF Gel	17.5-oz bottle	Blueberry Blast, Cherry Cheesecake, Chocolate Vanilla, Cotton Candy, Creamy Marshmallow, Juicy Grape, Peppermint Stick, Pink Bubblegum, Root Beer, Strawberry Delight, Vanilla Orange, Way-out Watermelon		\$20.50/bottle
Perfect Choice Flavor Pack	Biotrol	1.23% APF Gel	50 pack/10-g packs	12 Assorted Flavors		\$30.00
Topex NEUTRAL Fluoride Foam	Sultan Dental	2.0% Sodium Fluoride	4.4-oz can	Mixed Berry	0.9% fluoride ion	\$46.99/2 cans
Topex NEUTRAL Sodium Fluoride pH Gel	Sultan Dental	2.0% Sodium Fluoride	17-fl oz bottle	Mint, Pina Colada, Clearly Strawberry	0.9% fluoride ion	\$35.50/2 bottles
Topex 00:60 Second Foam Fluoride	Sultan Dental	1.23% Fluoride ion	4.4-oz can	Mint, Strawberry, Bubble Fun, Grape, Orange Dream	pH 3.5	\$46.99/2 cans
Topex 00:60 Second Topical APF Gel	Sultan Dental	1.23% Fluoride ion	16-fl oz bottle	Wild Cherry, Mint, Pina Colada, Bubble Fun, Orange Cream	pH 3.5	\$35.50/2 bottles
Fluoride Rinse						
ALLSolutions® Fluoride Rinse	DENTSPLY Professional	2.0% Sodium Fluoride	64-oz bottle	Tropical, Mint, Berry Cherry, Peach		\$35.75
Perfect Choice In-office Rinse Kit	Biotrol	1.24% APF and 1.64% Stannous Fluoride	64-oz bottle	Juicy Grape, Citrus, Pink Bubblegum, Peppermint Stick, Wild Berry		\$105.80/2 bottles
Perfect Choice Neutral Rinse	Biotrol	2% Neutral Sodium Fluoride	64-oz bottle	Spearmint, Wild Berry		\$31.65/bottle
60 Second 2-part In-office Kit	Sultan Dental	Fluoride Rinse Kit	4 @ 64-oz/0.31% APF 1 @ 64-oz/1.64% stannous, 2 pumps, mixing vial, 250 cups	Cherry, Spearmint, Bubble Fun		\$99.99/kit
Fluoride Varnish						
ALLSolutions® 5% Sodium Fluoride Varnish	DENTSPLY Professional	5% Sodium Fluoride	50 unit-doses	Raspberry		\$74.99/pkg
Duraflor	Medicom	5% Sodium Fluoride	16 unit-doses	Bubblegum	Contains xylitol	\$25.00/box
Fluor Protector	Ivoclar Vivadent	Fluorsilane Varnish	20 unit-doses	Neutral (no flavor)		\$74.95/pkg
Chlorhexidine						
Denti-Care	Medicom	0.12% Chlorhexidine Gluconate	16-fl oz bottle	Light Mint		\$84.00/case of 12 bottles
Oris® Chlorhexidine Gluconate Oral Rinse 0.12%	DENTSPLY Professional	0.12% Chlorhexidine Gluconate	16-fl oz bottle	Peppermint		\$7.35/bottle
Peridex	Omnii Oral Pharmaceuticals	0.12% Chlorhexidine Gluconate	16-fl oz bottle	Mint		\$10.00–\$12.00 (depending on qty)
XYLITOL						
SPRY	Xlear, Inc.	Gum	10 pieces/pack	Peppermint, Spearmint, Fresh Fruit, Cinnamon, Strawberry	Contains 70% xylitol, will not stick to dental work	\$17.80/20, pack of 10 & \$8.25/tub of 100
Dry Mouth Adjunct						
biotene Dry Mouth Gum	Laclede, Inc.	Gum	16 pieces	Sugar Free Mint	Reduces bacteria	\$1.75/pack
biotene Oral Balance	Laclede, Inc.	Mouth Moisturizing Gel	1.5-oz tubes	Light Pleasant Taste	Helps with swallowing	\$6.99/tube
Recaldent						
PROSPEC MI Paste	GC America	Polishing paste with bio-available calcium and phosphate	35-ml tubes	Melon, Mint, Strawberry, Tutti-Frutti, Vanilla		\$133.35/box of 10 \$13.33/tube

Q Are patients interested in using power toothbrushes?

A Patient interest in power toothbrushes has grown in recent years. Although only a few power toothbrushes may be recognized by consumers through advertising, there are many products available. Dentists and their staff must be attuned to the large variety of brushes on the market, ranging from full oral health care systems to inexpensive battery-powered brushes. Additionally, power flossers such as the **Hummingbird/Oral-B** and **Whitening flossers/Waterpik** are becoming popular amongst hygienists.

In 2003 the Cochrane Library reported a systematic review of the efficacy of power toothbrushes. This review compared manual and power toothbrushes for plaque removal, gingival health, staining and calculus removal, dependability, adverse effects and cost. The review concluded that power toothbrushes with a rotation oscillation action achieved a modest reduction in plaque and gingivitis compared to manual toothbrushing.

Property	1-3 Months	>3 Months
Reduction in plaque index	11%	7%
Reduction in gingival index	6%	17%

Although use of a power toothbrush by the average patient may not result in considerable oral health improvements, patients with poor brushing habits or limited motor skills may benefit greatly from such products.

Advantages

- Encourages active patient interest in their own oral health
- Excellent for physically-disabled patients or those with limited hand-motor coordination
- Can provide better cleaning results for some patients compared to manual brushing
- Allows better control of brush head movement compared to manual manipulation
- May come with built-in timing devices
- Some units feature interchangeable brush heads for multiple users

Concerns

- Brushing time may be decreased by patients
- Patients may not be as meticulous in brushing
- Brush heads need regular replacement
- Brushing effectiveness will decrease as batteries die or the brush heads become worn
- Brushes do not replace the need for regular flossing

Crest Spinbrush

- + Fun for children
- + Variety of colors, themes
- + Minimal cost
- + Widely available
- Low oscillation speed
- Battery-powered

HydraBrush Ultra

- + Six brush heads moving simultaneously brush both upper/lower arches at the same time
- + Button for water spray from four ports in brush head
- + Color-coded brush heads
- + Four brush heads at 45° angle for subgingival access
- Separate tongue cleaner is not powered
- Large unit and cord attached to brush limit portability
- Large brush

Oral-B AdvancePower 400 Series

- + Signals every minute
- + Available with compact charger
- Fewer features than other models

Oral-B ProfessionalCare 8850DLX

- + Small head contours well to teeth
- + Two-minute timer with signal every 30 seconds
- + Pressure sensor stops pulsations when brushing too hard
- + Charge lasts 7-12 days
- + Available with compact charger

Oral-B Sonic Complete S-320 Deluxe

- + Two or three cleaning modes (depending on model)
- + Two-minute timer with signal every 30 seconds
- + Crisscross bristles in head
- + Charge lasts two weeks

SenSonic SR-700

- + Ergonomic design with easy-to-grip handle
- + Senses brushing pressure and adjusts brush speed
- + Color-coded brush heads
- + Storage carousel in charger for extra brush heads
- No instruction manual included

Sonicare Advance 4100, 4300, 4700

- + Higher models indicate 30-second intervals with beep
- + Holds charge for about two weeks without recharging
- + Easily portable with travel case
- + Ramps up from low to normal power over first 12 brushings
- + Interchangeable brush heads
- + Large and small color-coded brush sizes
- Loud during operation
- Heavier, less ergonomic than **Sonicare Elite**

Sonicare Elite 7300, 7500, 7800

- + Higher models have two speed settings
- + Beeps indicate 30-second intervals
- + Holds charge for about 20, two-minute brushes
- + Easily portable with travel case
- + Ramps up from low to normal power over first 14 brushings

- + Interchangeable brush heads
- Loud during operation
- 7800 model not available in retail stores

Sonicare IntelliClean System 8800

- + Crest® liquid toothpaste dispensed from cartridge in handle
- + Two speed settings
- + Beeps indicate 30-second intervals
- + Holds charge for about 20, two-minute brushes
- + Ramps up from low to normal power over first 14 brushings
- Large diameter brush handle
- Loud during operation
- Many parts to clean

Ultra-Sonex SU900 Ultrasonic Toothbrush

- + Direct outlet plug on travel case
- + Soft bristles on brush head
- + Three models available, including one with flosser
- + Three cleaning modes
- + Three-minute timer with signal every 30 seconds
- + Narrow neck for good access to posterior
- + Charge lasts seven days
- Long narrow brush easy to tip over in charger
- Large brush head ■

Product	Company	Brushing action	Brush strokes/min	Battery	Charger base w/AC adaptor	Travel case	Multiple heads/ attachments	Timing Cycle	Cost
Crest Spinbrush	Proctor & Gamble	Oscillating top 1/2 of brush	na	2-AA	na	na	2 moving replaceable heads	na	\$5.99-\$7.99
HydraBrush Ultra	Oralbotic Research	Horizontal – short & quick	810	Rechargeable	A/C Adapter & storage module	No	2 UltraSoft BrushHeads (1 pair)	No	\$179.00
Oral-B AdvancePower 400 Series	Oral-B	Oscillation	na	2-AA	na	na	na	STOP-N-GO TIMER signals every minute	\$9.99
Oral-B ProfessionalCare 8850DLX	Oral-B	8,800 oscillations	Up to 40,000	Rechargeable	Rechargeable – lasts up to 2 weeks	na	3 brushheads & attachments	2-minute timer w/30-second interval timer w/pressure sensor	\$119.99
Oral-B Sonic Complete S-320 Deluxe	Oral-B	Sonic vibration w/3 brushing modes	na	Rechargeable	Charger stand w/refill storage	Yes	2	2 minutes	\$119.99
SenSonic SR-700	Waterpik	Sonic vibration	30,000	Rechargeable	Charger base/A/C Adapter	No	1 additional brush head	30-second quadrant timer	\$99.99
SynchroSonic Advanced Action DT-400	Waterpik	Sonic vibration	40,000	Rechargeable	Recharging base w/power indicator light	na	4 attachments	2 minutes	\$79.99
Sonicare Advance 4100	Philips Oral Healthcare	Patented sonic technology	31,000	Rechargeable	Charger base	No	1 brush head	2 minutes, w/30-second interval timer	\$69.99
Sonicare Advance 4300	Philips Oral Healthcare	Patented sonic technology	31,000	Rechargeable	Charger base	Yes	1 additional brush head	2 minutes, w/30-second interval timer (Quadpacer)	\$79.99
Sonicare Advance 4700	Philips Oral Healthcare	Patented sonic technology	31,000	Rechargeable	Charger base	Yes	2 additional brush heads	2 minutes, w/30-second interval timer (Quadpacer)	\$109.99
Sonicare Elite 7300	Philips Oral Healthcare	Patented sonic technology	31,000	Rechargeable	Charger base	Yes	1 brush head	2 minutes, w/30-second interval timer (Quadpacer)	\$119.99
Sonicare Elite 7500	Philips Oral Healthcare	Patented sonic technology	31,000	Rechargeable	Charger base	Yes	1 brush head	2 minutes, w/30-second interval timer (Quadpacer)	\$139.99
Sonicare Elite 7800	Philips Oral Healthcare	Patented sonic technology	31,000	Rechargeable	Charger base	Yes	3 additional brush heads	2 minutes, w/30-second interval timer (programmable Quadpacer)	\$139.99
Sonicare IntelliClean System 8800	Philips Oral Healthcare/Crest	Patented sonic technology	31,000	Rechargeable	Charger base	Yes	2 additional brush heads	2 minutes, w/30-second interval timer (programmable Quadpacer)	na
Ultra-Sonex SU900 Ultrasonic Toothbrush	Sonex International	Sonic vibration	18,000	Rechargeable	Dual charger base and travel charger	na	3 extra brushheads & attachments	3 minutes	\$69.99

na = not available

Alert + + + + 1/2

Pentron Clinical Technologies, LLC
800.551.0283 • 203.265.7397
www.pentron.com

Description

Alert is a posterior composite that provides good resistance to packing. It is radiopaque and highly filled (84% by weight). It is designed to mimic the handling and feel of amalgam and is curable to a depth of 5 mm. **Alert** is packaged in unit-dose blister packs or syringes in shades A2, A3, A3.5, B1, and C2.

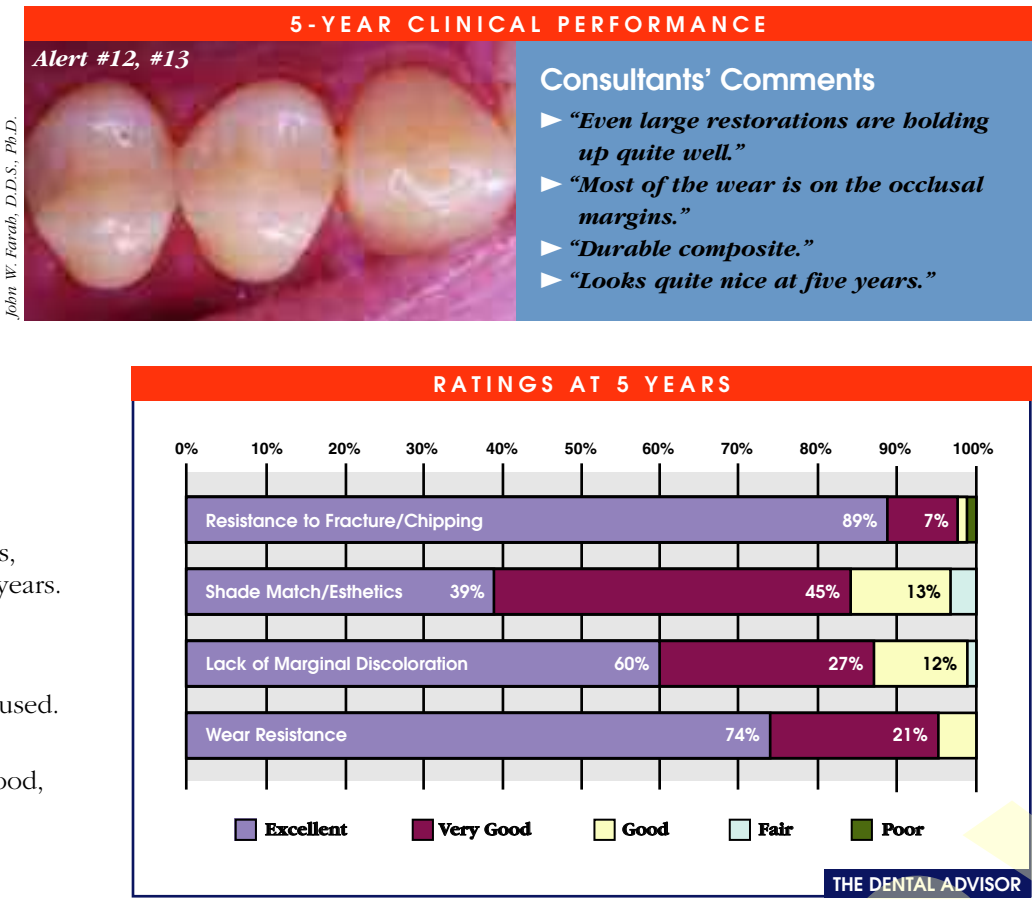
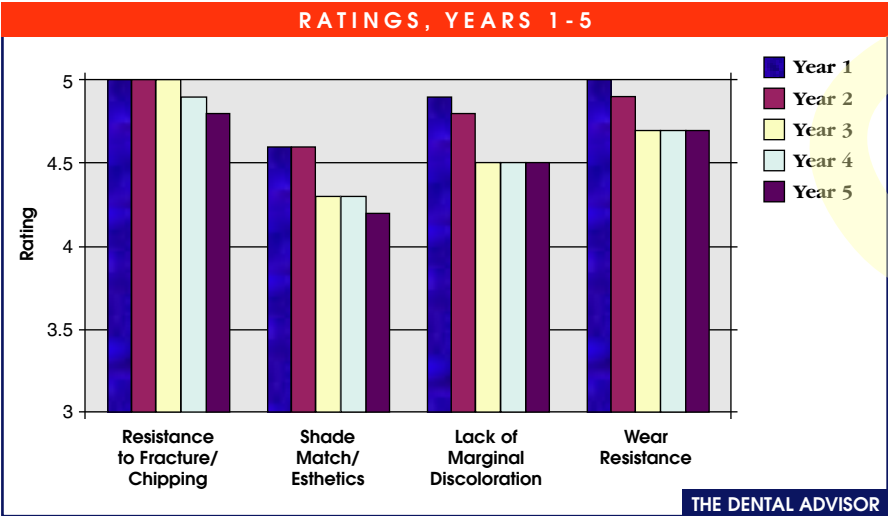
Clinical Evaluation Protocol

- 121 restorations, placed in 62 patients, were available for evaluation at five years.
- 96 of the 121 restorations involved proximal contacts.
- Various dentin bonding agents were used.
- Restorations were evaluated on a 1-5 rating scale: 1 = poor, 2 = fair, 3 = good, 4 = very good, 5 = excellent.

Clinical Observations

Resistance to Fracture/Chipping

Alert restorations have proven to be durable with 89% showing no chips or fractures during the fifth year of evaluation. Twelve restorations (9%) showed slight to moderate chips, requiring only refinishing or recontouring.



Shade Match/Esthetics

Thirty-nine percent of restorations were rated excellent for shade and esthetics, blending well with the surrounding enamel. Sixteen percent showed moderate discoloration with consultants describing the restorations as yellow, gray, or opaque. While esthetics ratings have decreased slightly over five years, most restorations were still esthetically acceptable.

Lack of Marginal Discoloration

Sixty percent of **Alert** restorations did not exhibit any marginal staining. Twenty-seven percent showed slight and 13% moderate staining, indicating some microleakage.

Wear Resistance

Occlusal wear has been consistent from years 3 to 5. A slight amount of wear was reported on 21% of restorations at five years, while 74% showed no visible signs of wear. The remaining 5% had areas of moderate wear.

EXABITE™ II NDS + + + + +

GC America, Inc.
800.323.7063 • 708.597.0900
www.gcamerica.com

Description

EXABITE II NDS is an automix, addition silicone bite registration material. It features the NDS delivery system designed to provide easier extrusion of the material from mixing tips that reduce clogging. The working time is 45 seconds with an intraoral setting time of 45 seconds. The light blue material is designed to have a hard set. It is available in a kit containing two 48-ml cartridges and 12 mixing tips or a bulk package containing eight 48-ml cartridges



and 48 mixing tips. Twenty-six consultants utilized **EXABITE II NDS** in over 400 applications.

Suggested Retail Cost

- \$128.00/eight-pack (four, 2-cartridge packages + tips)
- \$ 34.95/two-pack (2-cartridge package + tips)

Product Features

Overall, **EXABITE II NDS** is very simple to use. Ease of dispensing was noted to be very good with no clogging of the mixing tips. During extrusion, the material remains in place on the occlusal surfaces without running or slumping. The stiffness is beneficial to prevent deformation of the material when articulating casts. The set material is hard but not brittle and trims nicely with a blade. Seventy-seven percent of consultants found **EXABITE II NDS** to be the same as or better than the bite registration material they were currently using. Fifty-four percent of consultants would switch to **EXABITE II NDS** and 85% would recommend it.

Silkcare™ Powder Free Latex Gloves + + + + 1/2

Cranberry USA
707.553.6190
www.cranberryusa.com

Description

Silkcare Powder Free Latex Gloves are non-sterile exam gloves designed for general dental procedures. These gloves feature a microweb texture designed to enhance grip. The inner coating contains lanolin and vitamin E, which are intended to minimize dry skin associated with frequent hand washing while not leaving a residue. **Silkcare Powder Free Latex Exam Gloves** are available in ambidextrous sizes (extra small, small, medium, large, extra-large) and fitted sizes (6, 6.5, 7, 7.5, 8, 8.5). Thirteen consultants evaluated the ambidextrous **Silkcare Powder Free Latex Gloves** over a three-month period.

Suggested Retail Cost

- \$5.99/box of 100

Product Features

Silkcare Powder Free Latex Gloves provide a very good fit in the range of sizes evaluated (extra small to extra large). The inner coating gives the gloves a "silky" feeling. They are easy to don, resist tearing and are comfortable to wear. The texture was rated good, although it did not greatly enhance the grip. Gloves did not discolor during extended wear. Sixty-six percent of consultants would switch to **Silkcare Powder Free Latex Gloves** and 89% would recommend them to a colleague.

Consultants' Comments

- ▶ "Since I switched to these gloves, I no longer have dry, cracked skin."
- ▶ "Gloves slip on and off smoothly."
- ▶ "Easy to remove gloves from the box."
- ▶ "My hands were not as dry as usual."
- ▶ "Consider adding a mint scent."

SENIOR CLINICAL CONSULTANTS

- E. Alpert, CT
- R. Anthony, OH
- K. Baker, TX
- R. Ciccone, MI
- P. Esmond, NY
- M. Evans, TN
- R. Fisher, OH
- G. Franco, NY
- P. Grandsire, NY
- K. Hamlett, TX
- G. Hart, OH
- R. Kaprielian, NJ
- E. Katkow, MD
- L. Katkow, MD
- C. Kehr, MI
- E. Maitland, NJ
- E. Mosso, PA
- G. Mosso, PA
- D. Peterson, MD
- V. Plaisted, NY
- W. Powell, TX
- G. Poy, MI
- G. Sayre, TX
- K. Schwartz, FL
- B. Shumaker, NJ
- B. Sims, NY
- A.M. Thompson, NY
- R. Trushkowsky, NY
- L. Wee, MI

CLINICAL CONSULTANTS

- A. Abate, MI
- M. Aksu, MI
- A. Alexander, PA
- J. Allen, MI
- J. Amara, CT
- R.M. Arnett, MI
- R. Averbach, CO
- M. Bannan, MI
- D. Barnes, MD
- F. Berman, PA
- M. Beyramian, MI
- L. Bishop, MI
- J. Bostic, OH
- D. Bowen, MI
- E. Bowser, PA
- H. Bowser Sletten, PA
- R. Bozell, MI
- M. Braverman, NY
- L. Brimhall, MT
- M. Briskin, NY
- C. Brown Jr., MI
- C. Brown, LA
- W. Brownscombe, MI
- H. Buckwald, NJ
- J. Bush, PA
- H. Cadorette, MI
- P. Canyon, NY
- M. Chaben, MI
- D. Chacko, TN
- S. Cheff, TX
- R. Cherry, FL
- P. Chiaravalli, MI
- T. Chuang, NJ
- A. Colarusso, NY
- M. Conrad, PA
- K. Dancy, GA
- M. Danner, IL

3M ESPE Lava Crowns and Bridges + + + + 1/2

3M ESPE
800.634.2249
www.3MESPE.com

Description

3M ESPE Lava Crowns and Bridges is a new CAD/CAM system for anterior and posterior all-ceramic crowns and 3- or 4-unit bridges with a maximum span of 38 mm. Tooth preparation is similar to that for ceramic-metal restorations with a chamfer margin. Dies are scanned in the **3M ESPE Lava** milling unit, followed by three-dimensional milling of the zirconium oxide framework. The framework is colored with one of seven available shades to coordinate with the final restoration. It is then overlaid with **3M ESPE Lava Ceram** veneering ceramic. The zirconia ceramic provides high strength, while the overlay ceramic is designed for optimal esthetics. **3M ESPE Lava** restorations may be cemented with traditional cements.

Clinical Evaluation Protocol

- Restorations were fabricated by Orfan Dental Laboratory, Walpole, MA; Opus One Laboratories, Agoura Hills, CA; and Nellmar Laboratory, Ann Arbor, MI.
- 66 units were placed in 42 patients and were evaluated at insertion. These included single-unit crowns on six anteriors, 19 premolars, 29 molars and four, 3-unit bridges.
- All restorations were cemented with **3M ESPE RelyX UNICEM**.
- 58 units were evaluated at one year. These included single-unit crowns on 24 molars, 16 premolars, six anteriors and four, 3-unit bridges.
- Restorations were evaluated on a 1-5 rating scale: 1 = poor, 2 = fair, 3 = good, 4 = very good, 5 = excellent

Clinical Observations – Insertion

Overall Laboratory Product

Seventy-four percent of the restorations received from the laboratories were rated as very good to excellent. Four single crowns were returned to the laboratory for remake due to poor fit.

Shade Match/Esthetics and Vitality

Esthetics depended upon the laboratory used. Eighty-one percent of the restorations exhibited excellent esthetics at the time of insertion. Shade match was accurate to the shade requested. The zirconium oxide core blocked out discoloration in the preparation,

1-YEAR CLINICAL PERFORMANCE



3M ESPE Lava #18-#20

Consultants' Comments

- "3M ESPE Lava allows me to provide my patient with strong, esthetic restorations."
- "The marginal integrity is equivalent to that achieved with ceramic-metal restorations."
- "As found with all restorations, esthetics is largely dependent on the laboratory fabricating the restoration."

Photo Courtesy of Ariel Ruligowski, D.M.D., M.S.

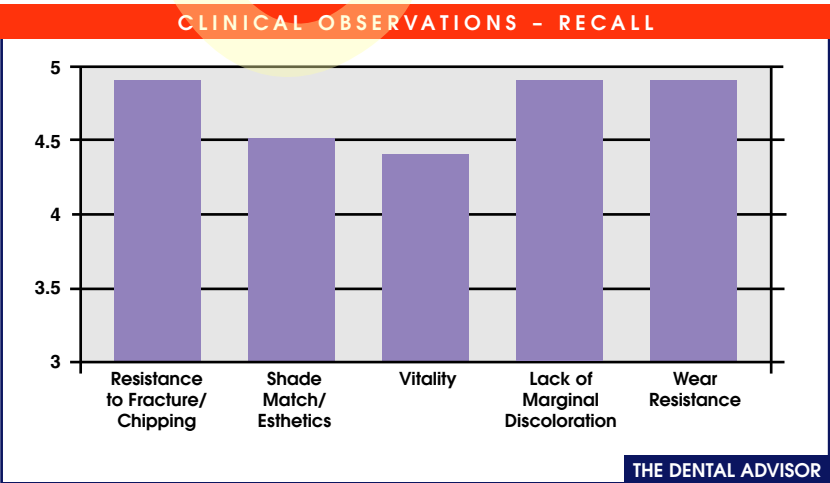
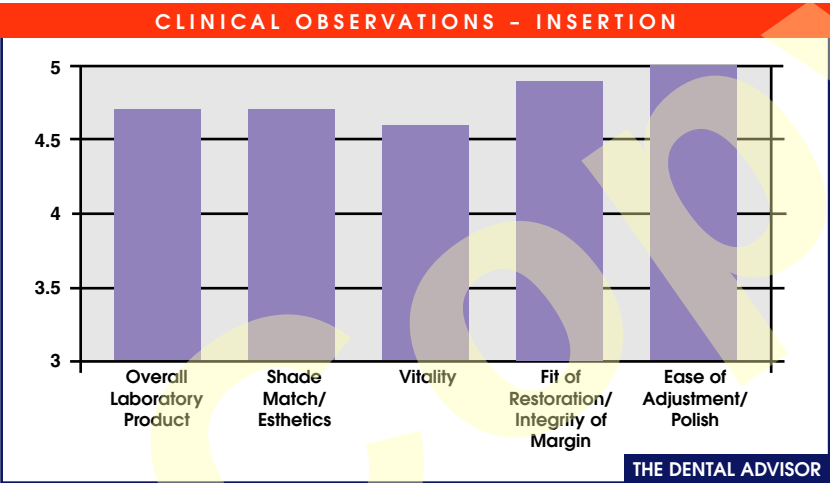
and the overlying porcelain created a vital appearance. Nineteen percent of the restorations demonstrated high value and were more opaque and monochromatic than desired.

Fit of Restoration/Integrity of Margin

Sixteen percent of the restorations required minor occlusal or interproximal adjustment. The four restorations returned to the laboratory for remake were returned to the clinician with excellent fit and marginal integrity.

Ease of Adjustment/Polish

While **3M ESPE Lava** is a strong material, the minor adjustments were easily accomplished and a glossy final polish was achieved.



Clinical Observations – Recall

Resistance to Fracture/Chipping

One restoration exhibited slight chipping, which did not necessitate replacement. No other chips or fractures were observed during the first year in place.

Shade Match/Esthetics and Vitality

The esthetics determined at placement remained consistent after one year. Eighty-six percent were rated as very good to excellent.

Lack of Marginal Discoloration

During the first year in the mouth, slight marginal discoloration was detected in 9% of the restorations.

Wear Resistance

Eighty-eight percent of the restorations exhibited no loss of the glossy surface or wear patterns after a year of function. ■

Multilink + + + + 1/2

Ivoclar Vivadent
800.533.6825 • 716.691.0010
www.ivoclarvivadent.us.com

Description

Multilink is a self-cured adhesive resin cement indicated for the cementation of indirect restorations made of metal, ceramic-metal, all-ceramic and composite. Self-etching Primer A and B are mixed in a 1:1 ratio and applied to the tooth before cementation. A metal primer is included and its use is recommended when cementing precious and non-precious metals. **Multilink** is available in three shades with different degrees of translucency: Transparent (high), Yellow (high) and Opaque (low). At intraoral temperature, the working time is about two minutes and the curing time is five minutes from start of mix. The system pack includes a 6-g dual-barrel syringe of **Multilink**, 3-g each of Primer A and B, 5-g of metal primer, a dispensing well and application brushes. Twenty-seven consultants used **Multilink** to cement over 450 restorations.

Suggested Retail Cost

- \$175.00/system pack

Product Features

The instruction cards for the use of **Multilink** are clear, well illustrated and excellent for use in the operator. The dual-barrel syringe ensures equal dispensing of the base and catalyst. Primer A and B and the metal primer are easy to use. The self-etching primer enhances convenience



Consultants' Comments

- "Very easy system to use."
- "Clear instructions."
- "Excellent dispensing."
- "Viscosity of material allows complete seating of the restoration."

by eliminating the separate acid-etching step. **Multilink** flows well, allowing the clinician to completely seat the restoration. The two-minute working time is adequate for use with single units and 3-unit bridges. The self-cure feature assures complete setting under opaque restorations. Removal of excess material is easily completed during the initial set. The incidence of post-operative sensitivity was reported to be negligible. Eighty-one percent of consultants reported **Multilink** was the same as or better than their current material and 85% would recommend it to a colleague.

Clinical Tips

- Mix cement longer to shorten the setting time.
- Remove excess cement immediately to prevent fully cured flash.
- Metal primer requires application for three minutes. Apply it to the restoration and let it sit while isolating the tooth for final cementation.
- Apply silane (not included) to the internal surfaces of all-ceramic restorations before cementation. ■

CLINICAL CONSULTANTS

- J. Dingman, WI
- J. DiPonziano, NJ
- R. Donelli, NY
- R. Dost, VA
- J. Doueck, NY
- M. Dwoskin, MI
- M. Eannaccone, NY
- R. Engle, IL
- K. Fairbanks, MI
- T. Faiver, MI
- R. Fay, TX
- N. Fehmi, MI
- M. Feinberg, NY
- J. Fine, NJ
- K. Fischer, IN
- S. Galster, ND
- D. Garber, IL
- M. Gay, MI
- N. Garlisi, OH
- L. Gee, OK
- A. Giovanardi, MI
- J. Glick, MI
- B. Goldsmith, NY
- I. Goldstein, NJ
- K. Goodman, MI
- S. Graber, IL
- D. Griggs, OH
- J. Grover, MI
- B. Gursky, MI
- E. Gutman, NY
- D. Haas, Canada
- H. Hamerink, MI
- S. Harden, GA
- B. Herrmann, CA
- R. Hervig, KS
- M. Hewko, OH
- S. Hoekman, MI
- S. Hondrum, GA
- J. Hoste, MI
- M. Hovel, WI
- S. Hutt, NJ
- P. Indianer, MI
- G. Isaacson, NJ
- S. Isaacson, NJ
- J. Jaghab, MI
- J. Jacobs, NY
- N. Johnson, MN
- T. Jowett, KS
- C. Kamin, OH
- J. Kaminski, MI
- T. Kaminsky, PA
- D. Kaplan, NY
- M. Kastner, OH
- S. Kelly, OH
- D. Keren, NY
- J. Kim, NY
- B. Klym, MI
- J. Kostohryz, TX
- J. Kotapish, OH
- J. Kotnour, WI
- M. Kruscke, MI
- K. Labadie, IL
- M. LaMarche, WA
- F. Leal, VA
- M. LeVasseur, MI
- S. Lever, MD
- I. Levine, NY
- R. Lezell, MI

4 Seasons® Flow + + + + ½

Ivoclar Vivadent
800.533.6825 • 716.691.0010
www.ivoclarvivadent.us.com

Description

4 Seasons Flow is a flowable light-cured, radiopaque fine-particle hybrid composite. It is indicated for use as a cavity liner and restorative material for small pit and fissure lesions and cervical areas. The material has a high translucency and blends easily with existing dentition. The **4 Seasons Flow** Assortment kit includes eight 2-g syringes of composite and 40 applicator tips. It is available in seven Vita shades (A1, A2, A3, A3.5, A4, C3 and D2) plus an extra-white bleach shade. **4 Seasons Flow** cures in the 400-500 nm wavelength range and should be cured for 20 seconds in increments up to 2 mm. Twenty-six consultants used **4 Seasons Flow** in over 430 applications.

Suggested Retail Cost

- \$154.75/assortment kit

Product Features

Instructions for use and packaging were well received by consultants. **4 Seasons Flow** has a syringe delivery system with applicator tips that allow extrusion with very little pressure. The shade matching was rated excellent.



Consultants' Comments

- ▶ *"Great product."*
- ▶ *"The radiopacity is a great feature."*
- ▶ *"Nice variety of shades."*
- ▶ *"The viscosity could be a little higher."*

The translucency allows the composite to blend well with the tooth. It polishes to a smooth surface with various polishing systems. A higher viscosity would be helpful during placement to prevent slumping and reduce the number of bubbles. Seventy-nine percent of consultants recommend **4 Seasons Flow**.

Clinical Tips

- After dispensing, retract the plunger slightly to prevent continued extrusion and waste.
- Before application, bleed off a small amount of composite to release air bubbles that occur during plunger retraction.
- Protect composite from the operatory light during placement to prevent premature curing. ■

bluephase + + + +

Ivoclar Vivadent, Inc.
800.533.6825 • 716.691.0010
www.ivoclarvivadent.us.com

Description

bluephase is a cordless LED curing light with light intensity of 1100 mW/cm². It emits light in the range of 430-490 nm, which activates many photo-initiators used in restorative materials. In addition to the LED handpiece, the unit comes equipped with a 13 > 8-mm power booster turbo light probe and guard, charging base, power pack with cord, and extra battery pack. A light intensity sensor is built into the charging base. The LCD display indicates three pre-programmed curing modes: high power, low power, and soft start. Curing times of 10, 20, 30, 40 or 120 seconds may be selected. After four minutes of idle time, the handpiece automatically switches to stand-by mode and is turned off. Reactivation requires pressing the start button, which also activates the display. This display on the handpiece shows the curing program and time, operating status and battery

charge remaining. Full charging takes two hours, and a fully charged battery has an operation time of approximately 60 minutes. The light may also be used with the direct plug-in power pack stored on the bottom of the charger base. **bluephase** was evaluated by 11 consultants during a three-month evaluation period.

Suggested Retail Cost

- \$1350.00

Product Features

All consultants who evaluated **bluephase** were familiar with LED curing lights and found the instructions easy to follow. The portable design allows the unit to be moved easily from one operatory to another. The unit is lightweight and has a balanced feel to the handle. The display is easy to read, even



Consultants' Comments

- ▶ *"Small, lightweight and portable."*
- ▶ *"Easy to change time settings."*
- ▶ *"Turning on/off requires multiple button pushes."*

Fiber-Splint ML + + + +

POLYDENTIA SA
+41.91.946.2948
www.polydentia.com

Description

Fiber-Splint ML (Multi-Layer) is a six-layer fiberglass ribbon that is 0.05-mm thick and 4-mm wide. The material is used for splinting mobile anterior teeth, denture repairs, framework for temporary bridges and post build-up. The fiberglass ribbon is dispensed from a 50-cm roll. The kit also includes five application clips to help affix the fiber interproximally. **Fiber-Splint ML** is compatible with **Fiber-Bond** or any bonding agent. **Fiber-Splint ML** was evaluated by 25 consultants in 138 clinical applications.

Suggested Retail Cost

- \$69.95/kit

Product Features

Fiber-Splint ML is packaged conveniently on a roll in a dispenser box. Consultants noted some difficulty with cutting the ribbon, stating that the ends of the ribbon frayed. **Fiber-Splint ML** is easy to place and bond with good flexibility and easy manipulation. When used for splinting,



Consultants' Comments

- ▶ *"Great product for splinting teeth."*
- ▶ *"Edges of the ribbon are delicate once cut."*
- ▶ *"Include scissors in the kit."*
- ▶ *"Difficult to cut cleanly."*

it provides a rigid, esthetic result. The size of the ribbon is adequate for all indicated uses. Seventy-six percent of consultants would switch to **Fiber-Splint ML** and 96% would recommend it to a colleague.

Clinical Tips

- Keep the area dry.
- Pre-measure the size of material needed.
- Saturate the fiber material with unfilled resin or bonding agent to improve flexibility before adhering it. ■

choose light intensity based on restorative needs, many consultants considered multiple modes unnecessary. In all modes the quality of the cure was rated very good, and there were no reported unit failures during the evaluation period. Fifty percent of consultants found **bluephase** to be the same as or better than their current curing light and 56% would recommend **bluephase** to a colleague.

Clinical Tips

- Use high power for curing most restorative materials.
- Use low power to reduce heat when placing adhesives and liners.
- Use the soft start mode to reduce shrinkage stress and heat build-up.
- Test for compatibility of the LED light with the material to be cured. ■

CLINICAL CONSULTANTS

R. Lieder, MI
M. Livernois, FL
J. Lockwood, MI
M. Lodge, MI
M. Man, NY
B. Manne, FL
N. Mansour, MI
N. Markarian, CA
D. Marsh, MI
M. Mason, NY
R. Mason, NY
W. Mason, MI
J. Mayer, OH
J.R. Meagher, NY
J. Mikesell, IL
C. Miller, PA
S. Miller, NV
R. Mizrahi, NY
L. Montes, NY
P. Moratto, MD
M. Morin, MI
S. Munro, WI
W. Nagy, WI
J. Nash, MI
A. Nazarian, MI
J. Neme, MI
L. Neuberger, ND
C.J. Noe, MD
E. Odenweller, OH
R. Oshrain, NY
J. Paris, TX
D. Parris, GA
R. Parrott, CA
D. Parsons, NY
M. Patel, MI
T. Paumier, OH
L. Perratto, NY
S. Picazio, NJ
T. Pieper, WY
D. Pietz, NC
W. Piskorowski, MI
D. Pitak, MI
M. Pitzen, WA
D. Powers, MI
L. Pozarny, NY
C. Price, TX
D. Qualliotine, NC
G. Raichelson, Canada
S. Ratner, NY
R. Reichl, NC
G. Reskakis, NY
C. Rice, MA
J. Riggs, MI
R. Ritter, FL
J. Robison, MI
M. Rogers, PA
W. Roper, TX
F. Ross, WI
K. Ross, MI
K. Rowan, MO
R. Sambuchi, MI
A. Sandak-Albright, NY
P. Sandvick, WI
D. Schimmel, PA
G. Schultz, PA
J. Sedlock, WI
R. Shah, MI
J. Shea, MO

Palfique Estelite + + + + +

J. Morita USA/Tokuyama Dental Corp.
800.831.3222 • 949.581.9600
www.jmoritausa.com

Description

Palfique Estelite is a microfilled composite indicated for anterior restorations. It is radiopaque and is filled 71% by volume with spherical particles averaging 0.2 µm. Ten Vita shades plus incisal, cervical and two opaque shades are available in both syringes and unit-dose capsules.

Consultants' Comments

- ▶ *"Restorations maintain a nice polish."*
- ▶ *"Patients comment on the smooth feeling of the restored teeth."*
- ▶ *"Many restorations are undetectable."*
- ▶ *"My first choice for esthetic restorations."*

Clinical Evaluation Protocol

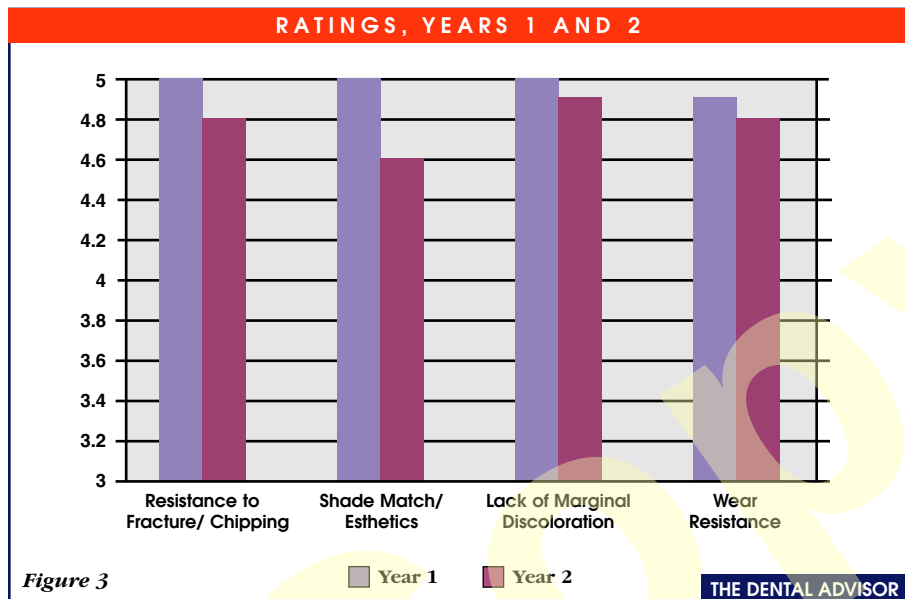
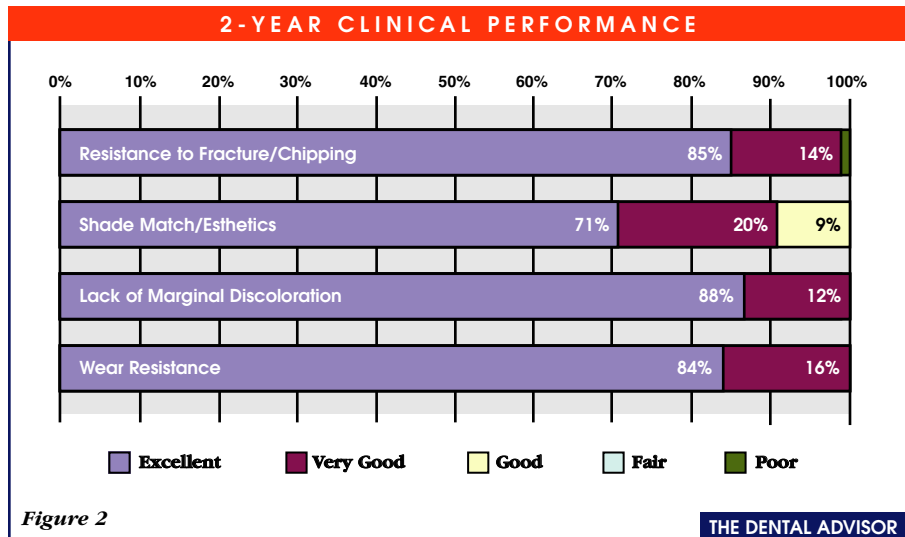
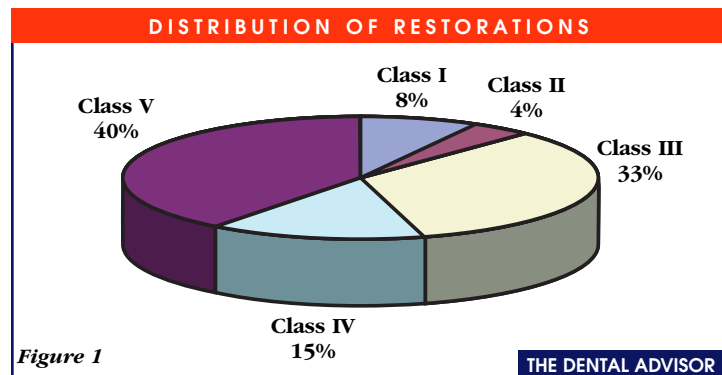
- 136 restorations in 65 patients were available for evaluation at two years.
- Distribution of restorations is shown in **Figure 1**. Class I and II restorations were placed in non-load-bearing areas.
- Various bonding agents and finishing/polishing methods were used.
- Restorations were evaluated on a 1-5 rating scale: 1 = poor, 2 = fair, 3 = good, 4 = very good, 5 = excellent

Clinical Observations

(See **Figures 2 and 3**)

Resistance to Fracture/Chipping

No chips or fractures were noted on 85% of **Palfique Estelite** restorations during the second year of evaluation. Slight chips were seen on 14% of restorations, and one chipped restoration required replacement.



Shade Match/Esthetics

Seventy-one percent of restorations have maintained excellent esthetics. The remainder showed slight to moderate discoloration. Both yellow discoloration and overall gray appearance of restorations were noted.

Lack of Marginal Discoloration

Eighty-eight percent of restorations did not show any staining at the margin. Twelve percent showed slight marginal staining.

Wear Resistance

Seventy-seven percent of restorations were rated excellent for wear resistance. Some restorations had slight wear, mainly noted as wearing along margins with some requiring refinishing. ■

Editors' Choice PRODUCT

P2 + + + + +

Heraeus Kulzer
800.431.1785 • 914.273.8600
www.heraeus-kulzer-us.com

Description

P2 is a polyether impression material indicated for final crown and bridge impressions. **P2** is hydrophilic like other polyethers, but **P2**'s pleasant scent and neutral taste are a vast improvement to the taste and odor of traditional polyether products. The material is available in three viscosities: light (yellow), heavy (green) and monophase (blue). Working time is two minutes, and setting time is 3.25 minutes in the mouth. The heavy and monophase consistencies are supplied in 360-ml foil bags and mixed using a dynamic mixing machine. The light-body is supplied in 50-ml automix cartridges. The heavy/light trial kit contains one bag of heavy-bodied material with 10 dynamic mix tips, two cartridges of light-bodied material with 12 static mixing tips and a dispensing gun plus tray adhesive. Sixty-three consultants evaluated **P2**, taking over 750 impressions during a three-month period.

Suggested Retail Cost

- \$170.77/trial kit Magnum 360 heavy/light
- \$123.33/trial kit Magnum 360 monophase



Consultants' Comments

- ▶ *"Much improved when compared to other polyethers."*
- ▶ *"Less stiff, easy release and taste is much improved."*
- ▶ *"Material does not stick to patients' lips and skin."*
- ▶ *"Accuracy and fit of restorations are great."*
- ▶ *"Nicely detailed impression – easy to read margins."*

Product Features

P2 cartridges are easy to load and the material is very easy to dispense. When the light-bodied material is injected around the preparation, **P2** stacks moderately well. Consultants felt that each of the three materials could be slightly more viscous. One important feature was that most patients had no objection to the taste or noted that it was neutral. Working time is adequate and setting time is faster than other polyethers. Consultants and patients appreciated the faster setting time that resulted in a quicker impression. The impression tray is extremely easy to remove from the mouth, another marked change from earlier polyethers. The hydrophilic nature of the material results in excellent

wetting of the preparations. Impressions have excellent detail, and the color contrast makes the margins easy to read. Consultants were pleased with the stiffness and high tear strength of **P2**. Eighty-four percent of consultants stated that **P2** was the same as or better than their current impression material and that they would switch to it. Seventy-six percent indicated that they would recommend it to colleagues. ■

What's New?

Palfique Estelite Sigma (J. Morita USA/Tokuyama Dental Corp. 800.831.3222) has recently been introduced and will eventually replace **Palfique Estelite**. **Palfique Estelite Sigma** is a universal composite indicated for both anterior and posterior applications. The material is filled 71% by volume with 0.1-0.3 µm spherical particles. **Palfique Estelite Sigma** maintains the smooth handling characteristics and shade blending of the original material. Eighteen radiopaque shades are now available, including a new bleach shade, in both syringes and unit-dose capsules. Look for the results of a clinical evaluation in an upcoming issue of THE DENTAL ADVISOR. ■



CLINICAL CONSULTANTS

J. Sinkwitts, MI
T. Slade, MI
R. Smith, NY
S. Smith, FL
M. Sonne, MI
J. Spingarn, FL
D. Stutman, NY
K. Swearingen, OH
M. Sylvester, CA
P. Symeonides, NY
J. Tabash, MO
H. Tetelman, OH
F. Tom, MA
R. Tonelli, WI
C. Trubschenck, CA
P. Tu, CA
S. Ura, NH
J. Utess, MI
H. Vann, MS
J. Van Tiem, MI
W. Walcott, MI
L. Walsh, MI
M. Waranowicz, MI
M. Warshanna, MD
J. Weissman, NY
R. Wilkie, MI
S. Williams, MO
R.G. Willis, SC
K. Wilson, MI
M. Wilson, MI
R. Wolf, IN
F. Wood, PA
H. Yeung, CA
D. Young, MI
S. Young, NY
M. Zahn, MI
P. Zanetti, MI
G. Zann, FL
S. Zimmer, MI

LABORATORY CONSULTANTS

Alpha Dental Studio, MI
Armstrong Laboratory, KY
D.H. Baker Dental Laboratory, MI
Davis Dental Laboratory, MI
Dental Prosthetic Services, IA
Dickerson Dental Studio, Inc., OH
Edmonds Dental Prosthetics, MO
Gnathodent Lab Corp., NY
Harmony Dental Laboratory, MD
Nellmar Laboratory, LLC, MI
New Image Dental Laboratory, GA
Noble Craft Prosthetics, Inc., NY
Oral Arts Dental Laboratory, GA
Ramsey Dental Ceramics, MI
Scullin Dental Laboratory, OH

Discus Dental, Inc.
800.422.9448 • 310.845.8200
www.discusdental.com

Description

ZOOM! is a light-assisted, in-office tooth whitening system. The **ZOOM!** procedure utilizes three 20-minute applications of 25% hydrogen peroxide gel with the ultraviolet light of the **ZOOM! Chairside Lamp**. To achieve optimal results, a four-day home touch-up kit with custom trays is recommended. The **ZOOM!** in-office gel is delivered in a dual-barrel syringe and is designed to be pH-balanced for low sensitivity and high efficacy. **FLUORIDEX DAILY DEFENSE** is a 1.1% neutral sodium fluoride toothpaste recommended for use two weeks before and after whitening to condition the teeth and assist in minimizing sensitivity. The **ZOOM!** Procedure Kit includes 25% hydrogen peroxide gel (4.6 g), two **Liquidam™ Dental Dam** syringes (1.3 g), **FLUORIDEX DAILY DEFENSE** toothpaste (1.3 g), protective lip cream, vitamin E oil, light guides, face bib, applicator brushes, gauze, material and a case for custom trays, and a 4% or 6% hydrogen peroxide take-home bleach syringe. Thirty patients received the **ZOOM!** in-office whitening treatment. All patients were asked to use the **FLUORIDEX DAILY DEFENSE** toothpaste for two weeks before and after the procedure and all were provided with the four-day take-home kit.

Suggested Retail Cost

- \$1,778.50/complete package which includes one **ZOOM! Chairside Lamp**, three Procedure Kits and three Lip and Tongue Retractors.

Product Features

ZOOM! in-office whitening produced excellent results. The instructions for use of the lamp and whitening materials are clearly written and well illustrated. The **ZOOM!** lamp is easy to program and operate. The lamp requires a three-minute cool down time between treatments. The cheek retractors, face bib, dental dam and protective creams provide excellent isolation. The viscosity of the gel allows ease of application and resistance to flow during the procedure. Whitening results varied depending on the nature and severity of tooth discoloration. On average the



Consultants' Comments

- ▶ "Very easy system to use. The video and instructions are clear."
- ▶ "Excellent isolation materials provided."
- ▶ "Gel did not run and the soft tissue was not harmed."
- ▶ "Excellent whitening results."
- ▶ "Allow at least 2 hours of chair time for the procedure."
- ▶ "The light unit should have wheels for portability."

in-office treatment whitened teeth seven shades on the Vita value-arranged shade guide. Most patients used the **FLUORIDEX DAILY DEFENSE** toothpaste before treatment and appreciated the clean feel and pleasant taste it produced. Minimal sensitivity was experienced by most patients during the bleaching procedure and during the 24-hour post-bleaching period. No sensitivity was reported by patients after 24 hours or after completing the four-day take home treatment. One hundred percent of patients were pleased with their whitening results. All dentists, assistants and patients would recommend the **ZOOM!** in-office whitening procedure.

Clinical Tips

- On-site training by the manufacturer's representative is provided and highly recommended.
- Two weeks before **ZOOM!** whitening, appoint the patient for impressions for bleaching trays. Dispense the **FLUORIDEX DAILY DEFENSE** at that time.
- Review the patient's medical history for use of medications that cause sensitivity to UV light.
- Staff and patients should utilize UV-protective eyewear.
- The in-office gel requires refrigeration; do not refrigerate the take-home gel. ■

February 25-27, 2005

Visit THE DENTAL ADVISOR
Chicago Midwinter Meeting, Booth #1415

Correction

Cerpress SL (Leach & Dillon, 800.535.2633) was labeled incorrectly as a traditional ceramic on page 4 of the November 2004 issue of THE DENTAL ADVISOR, Vol. 21, No. 9. **Cerpress SL** is a pressable ceramic. ■