

THE DENTAL ADVISORTM



Photography by John W. Farah, D.D.S., Ph.D., Ann Arbor, Michigan

THE DENTAL ADVISOR 2000 & Beyond

The year 2000 will bring many new materials, equipment and techniques to dentistry plus a better understanding of the clinical effectiveness of current products. The mission of THE DENTAL ADVISOR is to conduct objective, clinical evaluations and laboratory testing of dental products and equipment in cooperation with our clinical consultants and to share our findings with the dental profession through THE DENTAL ADVISOR and lectures throughout the world.

To celebrate the year 2000, we will publish special topic updates in each issue throughout Volume 17. Our first issue reviews recommended products for direct restorations. Future issues will review and recommend indirect materials and equipment. In each issue, our editors and consultants will comment on the future of these materials and equipment.

This issue of THE DENTAL ADVISOR describes and recommends bonding agents, microhybrid composites, packable composites, compomers, composite core materials, and amalgam alloys.

January/February
Vol. 17, No. 1

1999 CLINICAL EVALUATIONS ...2

BONDING AGENTS3

MICROHYBRID COMPOSITES4

PACKABLE COMPOSITES5

COMPOMERS6

COMPOSITE CORES7

AMALGAM ALLOYS8

CLINICAL EVALUATIONS	
Abradent DV-19	(Air-abrasion unit)
Alloybond10	(Amalgam bonding system)
Prime & Bond NT11	(Light-cured bonding agent)
Fuji II LC12	(Encapsulated hybrid ionomer)
Composite Contact Instruments13	
PowerLase XL14	(High-intensity, argon laser light)
IS-200014	(Addition silicone impression material)
Mucopren Soft15	(Soft denture relining material)
Hilux 250 Curing Light16	

CLINICAL CONSULTANT'S PROFILE - DR. BERLAND10

1999 CLINICAL CONSULTANTS' SYMPOSIUM13

NEED C.E. CREDITS OR A GUEST SPEAKER? - DR. FARAH16

Ratings

Excellent	+++++	96-100%
Very Good	++++	86-95%
Good	+++	76-85%

"Improved Patient Care
through Research"

January/February 2000
Vol. 17, No. 1

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Direct Restoratives 1999 Clinical Evaluations

Product	Company	Description	Rating	Issue
BONDING AGENTS				
ALLOY PRIMER	J. MORITA	Metal primer to bond resins to cast metal crowns, bridges or partial denture frameworks	+++1/2	16-9
CLEARFIL LINER BOND 2V	J. MORITA	Multi-purpose, dual-cured adhesive	++++	16-9
DENTASTIC UNO	PULPDENT	Single-component adhesive for bonding to tooth surfaces, composite, porcelain, and metal	++++	16-8
GLUMA ONE BOND	KULZER	Single-component, all-purpose adhesive	++++1/2	16-10
MR. BOND	TOKUYAMA AMERICA	Single-component, metal primer bonds acrylic to metal for relene or repair	++++	16-5
ONE COAT BOND	COLTENE/ WHALEDENT	Single-component, light-cured, multi-purpose adhesive	++++	16-6
SNAPBOND	COOLEY & COOLEY	Single-component, light-cured adhesive	++++1/2	16-3
COMPOSITES				
3M FILTEK P60	3M DENTAL	Packable posterior composite	+++++	16-7
3M FILTEK Z250	3M DENTAL	Universal composite	++++1/2	16-7
ALERT	JENERIC/ PENTRON	Packable posterior composite	++++	16-2
FLOW-IT! SELF CURE	JENERIC/ PENTRON	Self-cured flowable composite	+++1/2	16-8
PERFECTION	DEN-MAT	Microfilled composite	++++	16-3
PRODIGY CONDENSABLE	KERR	Packable posterior composite	++++1/2	16-9
RESINX	TEMREX	Flowable composite	++++	16-1
SOLITAIRE	HERAEUS KULZER	Packable posterior composite	++++1/2	16-9
SUREFIL	DENTSPLY/ CAULK	Packable posterior composite	++++1/2	16-3
SYNERGY	COLTENE/ WHALEDENT	Composite system; including extended shades and packable composite	++++	16-6
TRUE VITALITY	DEN-MAT	Fine-particle hybrid composite for direct and indirect restorations	++++	16-2
VERSAFLO	CENTRIX	Flowable composite	++++1/2	16-4
COMPOMERS				
ÉLAN	KERR	Compomer	++++1/2	16-4
COMPOGLASS FLOW	VIVADENT	Light-cured, radiopaque, flowable compomer	++++	16-3
COMPOSITE CORES				
CORESTORE	KERR	Dual-cured, fluoride-releasing, composite core	++++	16-5
LUXACORE	ZENITH/DMG	Auto-mixed, self-cured, composite core	+++++	16-9
GLASS IONOMERS				
FUJI IX GP	GC AMERICA	Powder/liquid, self-cured, packable glass ionomer	+++1/2	16-9
KETAC-MOLAR APLICAP	ESPE	Encapsulated, self-cured glass ionomer	++++	16-9
KETAC-SILVER APLICAP	ESPE	Encapsulated, self-cured, silver-reinforced glass ionomer	++++1/2	16-10
POSTS				
AESTHETI-POST	BISCO	Esthetic carbon fiber retention post for composite cores	+++1/2	16-7
FIBREKOR POST	JENERIC/ PENTRON	Esthetic, fiber-reinforced resin post	++++1/2	16-9
INTEGRAPOST	PREMIER	Parallel-sided titanium alloy post	++++1/2	16-1
U.M. C-POST	BISCO	Esthetic, tapered post for composite cores	++++	16-7
MISCELLANEOUS				
GERISTORE BIO-CAP	DEN-MAT	Light-cured composite for use as a base, liner, or pulp cap w/o a bonding agent	+++1/2	16-9



Dr. Powers, how will bonding agents improve in the future?

Bonding agents must be easy to use, provide high bond strength with direct and indirect restorations and minimize microleakage. New bonding agents will have acidic primers that will not require etching with phosphoric acid; will be compatible with composites, compomers and resin cements; and will minimize post-operative sensitivity without the need for separate desensitizing agents.



John M. Powers,
Ph.D.

Bonding agents condition and prime enamel and dentin, so that various direct and indirect resin restorative materials will bond. Single-bottle systems (5th-generation) have the primer and adhesive resin in one bottle, so mixing is not required. They are used for direct procedures. Multi-bottle systems (4th-generation) require mixing, are dual-cured and are used mostly for indirect procedures. Acidic primers (6th-generation), **F2000 Compomer Primer/Adhesive**, 3M Dental, are primarily recommended for use with compomers.

Questions & Answers

- Q: Do several applications of primer increase bond strength?
A: In-vitro bond strength is usually improved with two layers of adhesive as compared to one layer.
- Q: Are single-bottle systems as good as multi-bottle systems?
A: Bond strengths are comparable for both single- and multi-bottle systems.
- Q: Do bonding agents intended for bonding composites to tooth structure work with alloys and ceramics?
A: All-purpose adhesives can be used with multiple restorative materials. Follow the manufacturer's instructions carefully.

THE DENTAL ADVISOR Recommends

Product	Company	Product Characteristics	Issue	Cost, \$/ml	Rating, %
SCOTCHBOND MP PLUS	3M DENTAL	Multi-bottle, dual-cured, 4 th -generation	TDA 12-2, TDA PLUS 5-3	21.16	97
SINGLE BOND	3M DENTAL	Single-bottle, light-cured, 5 th -generation	TDA PLUS 7-5	21.23	97
BOND-1	JENERIC/PENTRON	Single-bottle, light-cured, 5 th -generation	TDA PLUS 7-1	8.32	96
OPTIBOND FL	KERR	Two-bottle, light-cured, dual-cured option, 4 th -generation	TDA PLUS 5-5	8.72	96



Scotchbond MP Plus (3M Dental)



Single Bond (3M Dental)



Bond-1 (Jeneric/Pentron)

Dr. Gregory, what advancements have been made in composites?

Advanced composites are known generically as microhybrid composites because of their small-diameter (0.4-1.0 μm) filler particles. Products for direct restorations are categorized as all-purpose, flowable and packable. All-purpose composites are noted for their improved polishability, whereas flowable and packable composites have special handling characteristics. Modern composites are wear resistant and color stable. Laboratory composites with special processing units are available for indirect restorations.



William A. Gregory,
D.D.S., M.S.

The main advantages of composite restorations are that they are tooth-colored and can be bonded to the tooth.

Ideal Characteristics

- ▶ Easy to dispense
- ▶ Viscous, packs well
- ▶ Excellent shade match and color stability
- ▶ Extended shades for whitened teeth
- ▶ Compatible with many bonding systems

- ▶ Not affected by ambient light
- ▶ Excellent polishability
- ▶ Excellent for anterior and posterior
- ▶ Good long-term clinical success

Technique Tips

- ▶ Choose a shade of composite before beginning the preparation.
- ▶ When syringing composites, always dispense less than you think you will need.

- ▶ Etch both dentin and enamel for 15 seconds.
- ▶ Avoid bulk filling to reduce polymerization shrinkage.
- ▶ Use a sharp Bard Parker #12 blade to assure a clean margin, free of bonding agent.
- ▶ Minimize the potential for a “white line” at the margins by rotating the finishing instruments from restoration to tooth.
- ▶ Check light intensity of light-curing unit regularly with a radiometer.

THE DENTAL ADVISOR Recommends

Product	Company	Product Characteristics	Issue	Cost, \$/ml	Rating, %
3M FILTEK Z250	3M DENTAL	Universal composite with filler sizes ranging from 0.1-3.5 μm , available in either unit-dose or syringes	TDA 16-9, TDA 16-7	32.19	95
TETRIC CERAM	VIVADENT	Fine-particle, hybrid composite with filler sizes ranging from 0.4-3.0 μm , available in either unit-dose or syringes	TDA 16-9, TDA 15-3	31.73	95
TPH SPECTRUM	DENTSPLY/ CAULK	Fine-particle, hybrid composite with average filler size less than 1.0 μm , available in either unit-dose or syringes	TDA 15-9, TDA PLUS 6-6	26.91	95



3M Filtek Z250 (3M Dental)



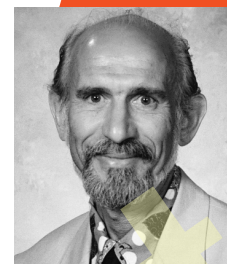
Tetric Ceram (Vivadent)



TPH Spectrum (DENTSPLY/Caulk)

Dr. Farah, in the new millennium, what do you foresee for the future of dentistry for packable composites?

Packable composites are easy to use and have acceptable properties. Future packable composites will have lower polymerization shrinkage, improved wear resistance and higher strength. Improvements in bonding agents will lead to simplified bonding techniques. Enhancements in polishing systems will result in better esthetics.



John W. Farah,
D.D.S., Ph.D.

Packable composites are alternatives to amalgam. They produce acceptable interproximal contacts in Class II and Class VI (MOD) restorations. Packable composites have average strength but high stiffness and high radiopacity. In-vitro wear rates are low (about 3.5 µm/year) and are comparable to amalgam. Because of the high depth of cure (>5 mm) and

low polymerization shrinkage (<1% linear) of packable composites, a bulk-fill technique may be possible.

Advantages

- ▶ Variety of packaging – compule, spill, syringe
- ▶ Packable
- ▶ High depth of cure
- ▶ Radiopaque

- ▶ Medium to high strength
- ▶ High stiffness
- ▶ Low polymerization shrinkage
- ▶ Low wear rate

Disadvantages

- ▶ New technique
- ▶ Potential for increased post-operative sensitivity
- ▶ More sensitive to ambient light

THE DENTAL ADVISOR Recommends

Product	Company	Product Characteristics	Issue	Cost, \$/ml	Rating, %
3M FILTEK P60	3M DENTAL	Easy to sculpt, very good marginal contacts, good shade match	TDA 16-9, TDA 16-7	32.03	93
SUREFIL	DENTSPLY/ CAULK	Good packaging and instructions, good resistance to packing forces, very good interproximal contacts, blends well, finishes and polishes nicely, excellent 1-year clinical results	TDA 16-9, TDA 16-3	37.31	93
PRODIGY CONDENSABLE	KERR	Organized kit, good marginal adaptation and interproximal contacts, easy to finish and polish	TDA 16-9	44.85	91
ALERT	JENERIC/ PENTRON	Complete kit, good resistance to packing forces, very good interproximal contacts, blends well	TDA 16-9, TDA 16-2	21.06	90



3M Filtek P60 (3M Dental)



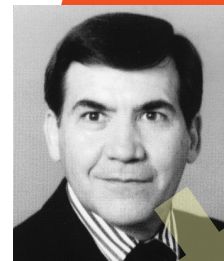
SureFil (DENTSPLY/Caulk)



Alert (Jeneric/Pentron)

Dr. Burgess, will the need for fluoride-releasing materials increase, and where do you see future improvements in these materials?

Yes, the need for fluoride-releasing materials will continue into the new millennium. High caries-risk patients are not decreasing, and these patients benefit the most from fluoride-releasing materials. Improvements will include increased fluoride release and higher fluoride uptake from toothpastes, topical fluoride gels and fluoride rinses.



John O. Burgess,
D.D.S., M.S.

Compomers or poly-acid-modified composites are blends of composite and glass ionomer. Recently, compomers have been modified to improve polishability and wear resistance. Compomers require a bonding agent to bond to tooth structure and are usually used with 6th-generation (acid primer) bonding agents that eliminate separate etching with phosphoric acid. Even so, some manufacturers recommend phosphoric acid etching before priming to improve bond strength.

Recommended Uses

- ▶ Cervical lesions, Class III
- ▶ Primary teeth, Classes I and II
- ▶ Sandwich technique – Class II
- ▶ Medium caries-risk patients
- ▶ Blockout of undercuts

Contraindications

- ▶ Direct or indirect pulp capping
- ▶ Core build-ups for all-ceramic crowns – due to expansion of the compomer

Advantages

- ▶ Compules – no mixing
- ▶ Easy to place – packable, not sticky
- ▶ May not require acid etching
- ▶ Fluoride-releasing

Disadvantages

- ▶ Incremental placement
- ▶ Bonding agent required
- ▶ Susceptible to water sorption (slight expansion)
- ▶ Not as strong or wear resistant as composites
- ▶ Dual-cured mode not available
- ▶ Limited esthetics – more shades needed

THE DENTAL ADVISOR Recommends

Product	Company	Product Characteristics	Issue	Cost, \$/ml	Rating, %
ÉLAN	KERR	Viscous, easy to shape, non-sticky, good shade match, nice single-bottle bonding agent, easy to finish and polish, 63% filler volume	TDA 16-4, TDA 15-8	25.75	92
COMPOGLASS F	VIVADENT	Excellent handling and placement, non-sticky, excellent shade match, 55% filler volume	TDA 15-8, TDA 15-7	36.26	90
DYRACT AP	DENTSPLY/ CAULK	Good packing, easy to polish to a smooth surface, good translucency and masking ability, 47% filler volume	TDA 15-10, TDA 15-8	29.73	88



Compoglass F (Vivadent)



Dyract AP (DENTSPLY/Caulk)

Dr. Yaman, how will composite core materials improve in the future?

Improvements in the properties of composite have made these materials very useful for core build-ups. Their versatility, shades, modes of curing, and handling make them a great addition for complex restorative procedures when significant tooth structure is lost. Increased bond strength of dentin adhesives will result in the use of composites as cores with less need for additional retentive features such as pins and posts.



Peter Yaman,
D.D.S., M.S.

Composite core materials are available in self-, light- and dual-cured formulations. The material is dispensed from a syringe, tub, compule or auto-mixed cartridge. Composite cores can be prepared immediately and have high rigidity. Composite cores demonstrate a strong bond to tooth structure when used with a bonding agent.

Ideal Features

- ▶ Ease of placement
- ▶ Adequate working and setting times
- ▶ Bonds to tooth structure with bonding agent
- ▶ Can be contoured and prepared immediately
- ▶ Cutting resistance like tooth structure
- ▶ High rigidity and strength
- ▶ Thermal expansion similar to tooth structure
- ▶ Tooth shade under ceramic crowns

Clinical Tips

- ▶ Prepare additional retentive features to retain composite cores in deep dentin.
- ▶ Place a separator (petroleum jelly, topical anesthetic) on the composite core to avoid bonding a temporary restoration to the core.
- ▶ Apply dentin bonding agent to the post when bonding a composite core to a post.

THE DENTAL ADVISOR Recommends

Product	Company	Product Characteristics	Issue	Cost, \$/ml	Rating, %
FLUOROCORE	DENTSPLY/CAULK	Light- and self-cured, high and low viscosity, dispensed in a syringe, medium compressive strength, blue and tooth-colored shades	TDA 16-6, TDA PLUS 7-4	15.03	98
LUXACORE	ZENITH/DMG	Self-cured, medium viscosity, auto-mixed, high compressive strength, blue and tooth-colored shades	TDA 16-9, TDA 16-6	9.09	96
CLEARFIL PHOTO CORE	J. MORITA	Light-cured, medium viscosity, dispensed in a syringe, high compressive strength, dentin shade	TDA 16-6, TDA PLUS 7-2	11.99	90
CORE PASTE	DEN-MAT	Self-cured, medium viscosity, dispensed in tubs, medium-high compressive strength, 6 shades	TDA 16-6, TDA PLUS 7-3	8.22	90



LuxaCore (Zenith/DMG)



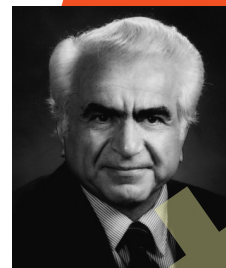
Clearfil Photo Core (J. Morita)



FlouroCore (DENTSPLY/Caulk)

Dr. Asgar, where do you see amalgam usage in the future? Will there be improvements?

Use of amalgam will continue to decline as patients opt for tooth-colored materials and as environmental concerns about mercury grow. Even so, amalgam alloys will be improved, resulting in better handling and properties. Non-mercury containing alloys are under development. Reusable capsules and new mixing/dispensing systems are likely to appear. Amalgam remains as one of the most durable restorative materials.



Kamal Asgar,
Ph.D.

Dental amalgam has been used successfully for more than 150 years, and its quality has improved over the years. Today, only high-copper alloys (gamma-2 free) are used in amalgam in the United States. High-copper amalgams have improved resistance to marginal breakdown, higher early strength and better resistance to corrosion. Amalgam is available in either admixed (spherical and irregular particles) or spherical (all-spherical particles) morphology.

Admixed Alloys

- ▶ Greater resistance to condensation
- ▶ Easier adaptation to cavity walls
- ▶ Better interproximal contacts
- ▶ Medium to high strength
- ▶ Weaker than all-spherical amalgams

Spherical Alloys

- ▶ Need about 10% less mercury to amalgamate than admixed alloys
- ▶ Lower resistance to condensation
- ▶ Higher strength than admixed alloys
- ▶ Smooth surface

Clinical Tips

- ▶ Dentin bonding agents decrease microleakage and temperature sensitivity.
- ▶ Calcium hydroxide is recommended only in very deep preparations (0.5 mm or less from pulp).
- ▶ Patients with high caries rate should benefit from a liner/base of glass ionomer.
- ▶ Glass ionomer cement is a good choice for moderately deep preparations requiring a base.

THE DENTAL ADVISOR Recommends

Product	Company	Product Characteristics	Issue	Cost*, \$ /capsule	Rating, %
VALIANT	VIVADENT	Spherical alloy with very high 1- and 24-hour compressive strengths, gradual set, also available in Snap Set	TDA 16-7	1.67	94
VALIANT PH.D.	VIVADENT	Admixed alloy with medium 1- and medium-high 24-hour compressive strengths, moderately firm pack, slow set	TDA 16-7, TDA PLUS 6-6	1.67	88
PERMITE	SDI	Admixed alloy with high 1- and medium-high 24-hour compressive strengths, firm pack, medium-fast set	TDA 16-7	0.98	83

*2-spill capsule



Valiant and Valiant Ph.D. (Vivadent)



Permite (Southern Dental Industries)

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■ Abradent DV-1 + + + +

CRYSTALMARK Dental Systems, Inc.,
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TDA Recommendation

Abradent DV-1 is a highly recommended air-abrasion unit. It received a 90% rating.

Description

Abradent DV-1 is a 33 x 28 x 28-cm countertop air-abrasion unit. It was evaluated in conjunction with the optional extraoral evacuation unit.

Abradent DV-1 may be placed on top of the evacuation unit, which is on casters, making the entire system portable among operatories. A compressed air line or a CO₂ or nitrogen cylinder is necessary as **Abradent DV-1** does not contain a compressor. The unit incorporates a unidirectional membrane air moisture filter, which eliminates all moisture in the operatory air supply. Powder flow and air pressure are selected with knobs on the face of the unit. Maximum pressure of 135 psi is dependent upon the air supply. Access to the powder chamber is through the rear panel of the unit. Twenty-seven-µm aluminum oxide is recommended. The handpiece is autoclavable and accepts screw-on nozzles in straight, 45- and 90-degree angles, each in 5 color-coded diameters ranging from 0.28 to 0.81 mm. Hook-shaped nozzles are also available separately, which articulate through an arc of 30 degrees. They are available in 4 sizes: 0.36, 0.46, 0.56, and 0.66 mm. The instruction manual suggests an appropriate powder flow setting for each diameter nozzle. **Abradent DV-1** comes with 2 handpieces, 5 nozzles, 3 patient goggles, and 0.45 kg of 27-µm powder. Consultants evaluated **Abradent DV-1** over an 8-month period.

Suggested Retail Cost: \$4,999.00/countertop
model
\$2,199.00/evacuation unit

Equipment Features

Consultants found **Abradent DV-1** easy to operate and incorporate into their office routine.

They were pleased with the low-pressure performance of the unit. During most cutting procedures, 70-80 psi was used. This pressure provided efficient cutting using the smaller diameter nozzles. The larger nozzles were useful for stain removal and etching procedures. No clogging of the nozzles was reported. The nozzles provided were found to be somewhat bulky with sharp, square corners. The handpiece tip allows the nozzle to have a 30-degree range of swivel motion, which allows for improved access to some areas of the mouth. The extraoral evacuation system controls some of the overspray into the operatory. Filling the powder chamber was easily accomplished, and no maintenance or repairs were necessary during the evaluation period.

Clinical Tips

- ▶ Use of an intraoral suction tip is recommended.
- ▶ Protective eyewear is necessary.
- ▶ A very low pressure setting of 20-40 psi allows for deeper preparation with little or no patient discomfort.
- ▶ If ceramic restorations exist in adjacent teeth, cover them with wax or petroleum jelly.

Consultants' Comments

- ▶ Patient response was very positive.
- ▶ "Narrow nozzles allow me to cut a precise preparation."
- ▶ Unit has an industrial appearance.



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J. Kotapish, OH
J. Kotnour, WI
K. Labadie, IL
M. LaMarche, WA
K. Lee, MI
J. Leitner, MI
J. Lerner, FL
S. Lever, MD
M. Leveson, NJ
S. Leveson, NJ
R. Lezell, MI
R. Lieder, MI
M. Livernois, FL

■ Alloybond

+++

Southern Dental Industries,
246 First St.,
San Francisco, CA 94105
800.228.5166 415.975.8060
www.sdi.com.au

TDA Recommendation

Alloybond is a highly recommended amalgam bonding system. It received an 87% rating.

Description

Alloybond is a fluoride-releasing amalgam bonding system. It can also be used for bonding to composite, bonding to sand-blasted, etched, silane-treated porcelain and gold, as well as for cementing crowns, bridges, inlays, and onlays. The kit contains 5 ml each of primer, base, and catalyst, a 2-ml syringe of **Super Etch**, 25 disposable etching tips, plus brushes, a handle and a mixing pad. After cavity preparation, the tooth surface is etched for 20 seconds, thoroughly rinsed, and then excess water removed (moist, not dry). Several coats of primer are applied, blown dry for 2 seconds, light cured for 10 seconds, then base and catalyst are mixed 1:1 and applied in a thin layer. Amalgam condensation is started within 60 seconds. Eighteen consultants placed 550 amalgam restorations, half with **Alloybond** and half without it.

Suggested Retail Cost: \$160.00/kit

Product Features

Alloybond was especially noted by consultants to be an easy system to use with adequate working time. It rated very good with respect to ease of dispensing and mixing, ease of condensing amalgam over it and quality of finished margins. Consultants felt post-operative sensitivity was reduced significantly. Seventy-three percent of consultants stated that they would purchase and recommend **Alloybond**.

Clinical Tip

► Coat the matrix band with silicone spray or wax to prevent bonding the amalgam to the band.

Consultants' Comments

- "Less post-operative sensitivity when I used Alloybond."
- Easy application.

Clinical Consultant's Profile – Dr. Berland

Dr. Lorin Berland graduated from Loyola School of Dentistry in 1981 then completed a 1-year G.P.R. at the University of Texas Health Science Center in San Antonio.

Dr. Berland has been in private practice since 1982. He was on the faculty of Baylor Dental College before opening his own practice in the Dallas Arts District. Dr. Berland was accredited by the American Academy of Cosmetic Dentistry in 1986 and received a Fellow in 1992.

Dr. Berland lectures extensively and is one of the most published authorities on cosmetic dentistry in the world. He has appeared on television numerous times along with regular features in *Dentistry Today*, *Dental Economics*, *Cosmopolitan*, *US News and World Report*, *Wall Street Journal*, *GQ*, *Glamour*, *Vogue* and the *Dallas Morning News*. Recently, he has been featured on *20/20* and *Positively Texas*.

Dr. Berland evaluates and helps develop new materials for several companies and laboratories. Dr. Berland lectures nationally on building your practice with incredible cosmetic dentistry strategies from marketing to materials to techniques.



Lorin Berland, D.D.S.

CLINICAL CONSULTANTS

J. Lockwood, MI
M. Lodge, MI
B. Manne, FL
N. Mansour, MI
R. Marion, MI
N. Markarian, CA
W. Mason, MI
S. Masys, NY
B. Matis, IN
J. Mayer, OH
J. McCarthy, WI
J. McCollum, WI
B. McKnight, PA
J. R. Meagher, NY
M. Mercer, MI
R. Michaelson, MI
J. Mikesell, IL
C. Miller, PA
S. Miller, OH
S. Miller, PA
L. Montes, NY
P. Moratto, MD
M. Morin, MI
L. Moseley, MD
W. Nagy, WI
J. Nei, MN
J. Neme, MI
E. Odenweller, OH
F. Olden, TX
R. Oshrain, NY
R. Padley, MO
R. Paffenbarger, MI
G. Pappenfus, MN
J. Paris, TX
M. Parker, NY
D. Parris, GA
R. Parrott, CA
D. Parsons, NY
T. Paumier, OH
L. Perratto, NY
S. Picazio, NJ
T. Pieper, WY
W. Piskowski, MI
D. Pitak, MI
D. Powers, MI
L. Pozarny, NY
C. Price, TX
B. Purmell, MI
D. Qualliotine, NC
J. Ragain, OH
S. Ratner, NY
R. Reichl, NC
G. Renz, CT
G. Reskakias, NY
R. Ritter, FL
J. Robison, MI
M. Rogers, PA
W. Roper, TX
F. Ross, WI
K. Rowen, MO
H. Salzberg, IL
R. Sambuchi, MI
P. Sandvick, WI
D. Schimmel, PA
G. Schultz, PA

■ Prime & Bond NT + + + + 1/2

DENTSPLY/Caulk,
P.O. Box 359,
Milford, DE 19963
800.532.2855 302.422.4511
www.caulk.com

TDA Recommendation

Prime & Bond NT is a highly recommended light-cured bonding agent. It received a 91% rating.

Description

Prime & Bond NT is a self-priming bonding agent that contains nanofillers of amorphous silicone dioxide, which differentiates this product from **Prime & Bond 2.1**. In addition to the nanofillers, **Prime & Bond NT** is primarily composed of di- and tri-methacrylate resins, PENTA (dipentaerythritol penta acrylate monophosphate), and contains an acetone solvent. It combines both the primer and adhesive in a single bottle and requires only 1 application followed by a 10-second light cure. **Prime & Bond NT** is designed to bond composite materials and compomers to enamel and dentin. It is also indicated for the bonding of veneers, composites and ceramics, as well as an adhesive cavity varnish for amalgam. The introductory kit contains 1, 4.5-ml bottle of adhesive, 40 disposable brush tips, an applicator brush handle, a re-usable well, an instruction booklet, and a laminated instruction card. The introductory kit does not contain an etchant; however, the economy kit contains 3, 4.5-ml bottles of adhesive, 1 syringe of etching gel and accessories. Twenty-two consultants evaluated **Prime & Bond NT** in over 450 clinical cases.

Suggested Retail Cost: \$ 94.25/introductory kit
\$254.30/economy kit

Product Features

Prime & Bond NT was highly rated for its instructions and ease of coating the preparation. Consultants found the system easy to use, and



they appreciated the single-bottle, 1-step system. The squeezable bottle and good flow of the adhesive contributed to the ease of dispensing. In addition, no bonding problems were reported over the 3-month evaluation period. The majority of consultants found **Prime & Bond NT** to be the same as or better than their current adhesive and indicated that they would switch to it. Eighty-two percent of consultants would purchase **Prime & Bond NT**, and 94% would recommend it.

Prime & Bond NT	
Bond strength to dentin, MPa	21

Clinical Tips

- ▶ Do not dispense until ready to apply to avoid evaporation of solvent.
- ▶ Eugenol-containing dental materials should not be used with Prime & Bond NT, because they may interfere with the polymerization of polymeric components.

Consultants' Comments

- ▶ "I liked the viscosity of this product."
- ▶ "Doesn't seem to evaporate as quickly as Prime & Bond 2.1."
- ▶ "I could not tell much difference between this material and Prime & Bond 2.1."
- ▶ Some consultants disliked the acetone smell.

THE DENTAL ADVISOR Web Site

THE DENTAL ADVISOR is on the Internet!
Visit us at our Web Site: www.dentaladvisor.com
E-mail: info@dentaladvisor.com

CLINICAL CONSULTANTS

M. Shapiro, MA
J. Shea, MO
T. Slade, MI
R. Smith, NY
S. Smith, FL
M. Sonne, MI
J. Spingarn, FL
A. Strait, CT
D. Stutman, NY
K. Swearingen, OH
M. Sylvester, CA
J. Tabash, MO
H. Tetelman, OH
R. Tonelli, WI
R. W. Toothaker, NE
C. Trubschenck, CA
P. Tu, CA
A. Tucklaper, MI
S. Ura, NH
J. Utess, MI
J. Van Tiem, MI
W. Walcott, MI
L. Walsh, MI
M. Waranowicz, MI
G. Webb, MS
L. Wee, MI
J. Weissman, NY
R. Wilkie, MI
S. Williams, MO
R. G. Willis, SC
M. Wilson, MI
R. Wolf, IN
M. Wolfgang, HI
F. Wood, PA
M. Wright, IN
H. Yeung, CA
S. Young, NY
M. Zahn, MI
P. Zanetti, MI
G. Zann, FL

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
New Image Dental Laboratory, GA
Noble Craft Prosthetics, Inc., NY
Oral Arts Dental Laboratory, GA
Ramsey Dental Ceramics, MI
Scullin Dental Laboratory, OH

■ Fuji II LC

++++

GC America, Inc.,
3737 W. 127th St.,
Alsip, IL 60803
800.323.7063 708.597.0900
www.gcamerica.com

TDA Recommendation

Fuji II LC capsules are a light-cured, hybrid ionomer highly recommended for root surface restorations, cervical erosion/abfraction lesions, Class III and V restorations and conservative core build-ups. It received a 90% rating.

Description

Fuji II LC capsules are a pre-measured, encapsulated version of **Fuji II LC** hybrid ionomer restorative. Capsules are individually packaged in sealed foil envelopes. They are activated by thumb pressure on a push-button plunger before mixing in a high-speed capsule mixer (amalgamator). Tooth surface preparation requires smear layer removal with **GC Cavity Conditioner** or polyacrylic acid. The restorative can be dispensed directly into a cavity preparation (the outside dimension of the capsule nozzle is 1.5 mm) or onto a mixing pad for instrument pick-up. **Fuji II LC** capsules have both light-initiated and chemical setting capabilities. Finishing may begin immediately after cure, and the manufacturer suggests using superfine diamonds and/or silicone abrasive points. Eleven Vita shades are available. **Fuji II LC** capsules were evaluated by 17 consultants in over 450 clinical uses.

Suggested Retail Cost: \$150.00/50 capsules

Product Features

Mixing **Fuji II LC** capsules is fast and readily accomplished. The uniformity of consistency is very good. Use of the capsule and the gun applicator were rated good to excellent by 88% of consultants. The final polish is easily achieved. It is smoother than regular glass ionomers but not as smooth as composite. Many consultants were enthusiastic about the use of the capsules

as a base/liner under composite restorations, particularly “packables,” citing its adaptation to tooth surfaces and fluoride release as characteristics beneficial to achieving and maintaining good margins. Post-operative sensitivity was negligible. The applicator gun may be autoclaved – chemical sterilization is not recommended. **Fuji II LC** has a 2-year shelf life. Eighty-two percent of consultants would purchase and recommend **Fuji II LC**.

Clinical Tips

- ▶ Good for pediatric cases since retention is a chemical bond and is not based on etching of enamel – known to be hard to accomplish in primary teeth.
- ▶ Material is somewhat sticky – use bonding liquid on instrument as a separator.
- ▶ Overlay anterior cervical fills with composite for high quality polish.

Consultants' Comments

- ▶ “Very different from composite – packing, direct capsule application is best.”
- ▶ “No bubbles in the mixes.”
- ▶ Slump resistance is good.
- ▶ Very fast technique – good pediatric and geriatric applications.
- ▶ “Somewhat expensive, but gives a consistent mix and is easy to use with a quality result.”
- ▶ Enough material is contained in each capsule for more than 1 restoration.



■ Composite Contact Instruments

Premier Dental Products Co.,
3600 Horizon Dr.,
King of Prussia, PA 19406
888.773.6872 610.239.6000
www.premusa.com

TDA Recommendation

Composite Contact Instruments are highly recommended for use during placement of posterior composite restorations. They received an 86% rating.

Description

Composite Contact Instruments are designed to assist in obtaining firm interproximal contacts for posterior composite restorations. They have black, anodized aluminum surfaces, knurled grips, are lightweight, and are available in 2 sizes (small/medium, medium/large). The instrument surface is intended to eliminate composite sticking and will not abrade or discolor restorations. Place composite in the proximal box, then insert the instrument tip and apply gentle pressure toward the matrix band. Following light curing, remove the instrument, and fill and light cure the remaining preparation in the usual manner. **Composite Contact Instruments** were used 600 times by 23 consultants.

Suggested Retail Cost: \$26.50 each

Product Features

Consultants found the instructions for **Composite Contact Instruments** to be excellent. Many found the instruments easy to use and liked their angle and design. The grip of the instruments was reported as excellent, and the quality

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of the contacts produced was very good overall. The resistance to stickiness was good, although some consultants found that composite material would stick slightly to the tips on occasion. Separate sterilization is necessary for the instruments, because they should not be autoclaved with unlike metals in the same bag. The durability of the surface finish was very good after repeated sterilization. Seventy-eight percent of consultants found **Composite Contact Instruments** to be the same as or better than the instruments they were currently using to create interproximal contacts. Sixty-five percent of consultants reported that they would purchase the **Composite Contact Instruments**, and 68% would recommend them.

Clinical Tips

- ▶ Do not expose instruments to solutions containing iodophors with a pH greater than 8.
- ▶ Choose a tip size that fits "loosely" into the proximal box.
- ▶ Do not overfill with composite to avoid locking in the instrument.
- ▶ Wetting the end of the instrument with a bonding agent helps prevent sticking.
- ▶ Wedging and matrix adaptation are still critical for establishing a good contact.

Consultants' Comments

- ▶ "Nice, lightweight feel."
- ▶ "Excellent, predictable contacts produced."
- ▶ Additional instruments with smaller tips would be helpful. (An extra-small/small tip is now available.)
- ▶ Separate sterilization is inconvenient.

1999 Clinical Consultants' Symposium

This year's symposium was held at THE DENTAL ADVISOR on November 6th, 1999. We wish to thank all the consultants who contributed to our brainstorming process with their valuable feedback. For the consultants who were unable to attend, we have some exciting ideas for the new millennium as well as some upcoming issues of THE DENTAL ADVISOR that we know you'll find interesting. We're looking forward to a year of advancement with updates to our web site, more involved equipment evaluations and the possibility of special advanced lecture courses. Thank you to all our consultants who have provided us with excellent survey data, clinical tips and case photos over the past year. We look forward to keeping all of our readers up-to-date with the advancements in dentistry that the year 2000 will bring!



Photography by Jill G. Hutchinson, R.D.R., B.S., Moneta, Virginia

■ PowerLase XL

+++ 1/2

Lares Research,
295 Lockheed Ave.,
Chico, CA 95973
800.347.3289 530.345.1767
www.laresdental.com

TDA Recommendation

PowerLase XL is a high-intensity, argon laser light source recommended for quick light curing and tooth bleaching. It received an 82% rating.

Description

PowerLase XL uses an argon-ion, air-cooled light source capable of generating laser radiation in the 457 to 501-nm range. The power to this compact countertop unit is controlled by a key lock switch and is activated by a foot pedal. The digital display on the control panel informs the clinician of the power levels at the handpiece and laser source. The display can also show the accumulated run time when the menu button is pressed. The power output, ranging from 100-250 mW, must be adjusted for each brand of light-cured material and can be verified using the power calibration port. Emission indicator, standby/ready and operate lights indicate power supply to the laser tube, its activation and its operation during use, respectively. The handpiece can be cleaned and disinfected with alcohol; however, aseptic use requires use of a handpiece sleeve. The average life of the laser tube is 2000 hours. The fused silica fiber-optic cord and handpiece are 178 cm long. PowerLase XL was used by consultants over a 6-month evaluation period.

Suggested Retail Cost: \$8,950.00

Equipment Features

PowerLase XL is easy to assemble and use. The long light guide cord allows adequate working length; however, the

large 12-mm curing tip makes access to posterior areas difficult. Clinicians were pleased with the light weight of the handpiece and the lack of heat generated during operation. The narrow light beam cures a small area requiring several cycles to cure the entire composite. The manufacturer includes a 3-page list of curing times and power settings required for specific bonding agents, composites, sealants, and other light-cured materials. Curing time varies from 5-30 seconds per increment. The unit is quiet during operation, generating only those acoustic signals needed to indicate light activation. The display and power calibration provide a constant reading of the amount of radiation being delivered. Clinicians preferred the quick cure of PowerLase XL to traditional lights.

Clinical Tips

- ▶ Lares Research will determine curing times for any light-cured or bleaching material not included on their list of brands.
- ▶ Use of protective eyewear is mandatory.
- ▶ A danger sign indicating the use of an argon dental laser must be posted in the operatory with PowerLase XL.

Consultants' Comments

- ▶ Quick cure is time efficient.
- ▶ Changes in the angulation of the handpiece can affect the quality of the cure.
- ▶ Different settings required for each material are not practical in an office using many different types of light-cured material.
- ▶ "Many of the products we use were not on their list." (A list with updates is available as a download from their web site.)

Note: An optional 0.4-mm "Access" handpiece is now available for hard-to-reach areas.

■ IS-2000

++++ 1/2

Direct Dental Service,
1161 E. Clark Rd.,
DeWitt, MI 48820
800.342.5337 517.669.3654

TDA Recommendation

IS-2000 is a highly recommended addition silicone impression material. It received a 92% rating.

Description

IS-2000 is a system of impression materials available in 11 different viscosities and setting times. The light-body regular



See IS-2000 page 15.

■ Mucopren Soft

Roydent Dental Products,
1010 West Hamlin Road,
Rochester Hills, MI 48309
800.992.7767 248.652.2505

TDA Recommendation

Mucopren Soft is a highly recommended soft denture relining material. It received an 86% rating.

Description

Mucopren Soft is a long-term, addition silicone soft liner for direct and indirect use with complete and partial dentures. The material is dimensionally stable and can be repaired if needed. **Mucopren Soft** can be used for permanent soft linings, relieving discomfort from sharp areas or healing ridges, conditioning the mucous membranes in patients with denture sores, and for maxillofacial prosthetic applications. The introductory kit contains 1, 48-ml cartridge of soft liner, 1, 48-ml cartridge of silicone sealant, a 10-ml bottle of adhesive, 7 soft liner mixing tips, 20 sealant mixing tips, 1 brush holder, 20 disposable brushes, and polishing accessories. Also included are 30 small, single-page patient brochures.

Apply the adhesive in 2 coats on a clean, prepared and roughened surface before application of the soft liner. The total working time of the soft liner is 2:15 minutes, with an intraoral setting time of 3:15 minutes. Once relined, immerse the denture and soft lining in 40 °C water for at least 10 minutes or at room temperature for 30 minutes to allow for complete setting. Use the silicone sealant as a thin coat over the soft liner following trimming and finishing. Most consultants were able to use the kit for 3-4 relines. Ten consultants evaluated **Mucopren Soft** in 23 clinical cases.

Suggested Retail Cost: \$244.95/introductory kit

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Product Features

Mucopren Soft was highly rated for its ease of applying the adhesive, adaptation of the liner to tissue, and removal from the denture as needed. Consultants found the delivery system easy to use with no mixing and minimal clean-up. The application of the silicone sealant created an extra step for consultants, but did provide resistance to staining. There was no adverse taste or odor reported, and most patients were satisfied with the end result. Seventy-eight percent of consultants found **Mucopren Soft** to be the same as or better than their present relining system, and 66% would both purchase and recommend **Mucopren Soft**.

Clinical Tips

- ▶ Use scissors rather than a sharp knife to cut the material.
- ▶ "When adjusting the soft liner, the Dedeco 5111 acrylic wheel is an excellent adjunct!"
- ▶ May help patients with persistent lower denture soreness.

Consultants' Comments

- ▶ "Very easy to work with."
- ▶ "Delivery system is a great benefit."
- ▶ "Nice product to have for select cases."
- ▶ Comparable in cost to a laboratory reline and offers the convenience of quick return to patient.



(continued from page 14)

IS-2000

++++ 1/2

set and heavy-body regular set are supplied in 2, 50-ml cartridges with 6 mixing tips. IS-2000 was evaluated by 24 consultants in taking 230 crown and bridge impressions.

Suggested Retail Cost: \$21.95/2, 50-ml cartridges

Product Features

IS-2000 provided accurate impressions, which were easy to read. The light-body material was easy to extrude and flowed and stacked well. When using a dual-arch tray,

patients could easily close into the material, yet it was stiff upon removal. IS-2000 heavy-body and light-body viscosities blended well in the set impression. Seventy-nine percent of consultants would recommend IS-2000, and 48% would switch to it.

Consultants' Comments

- ▶ "Impressions are beautiful."
- ▶ Include intraoral placement tips and more mixing tips.
- ▶ "Assistant had difficulty extruding the heavy-body material." (Use the larger 6.4-mm tip for easier extrusion.)

■ Hilux 250 Curing Light

++++ 1/2

First Medica,
P.O. Box 7403,
Greensboro, NC 27417
800.777.7072 336.292.8877
www.firstmedica.com

TDA Recommendation

Hilux 250 Curing Light is a highly recommended light-curing unit. It received a 95% rating.

Description

The **Hilux 250 Curing Light** features a 75-watt halogen bulb with high intensity output ($>600 \text{ mW/cm}^2$). Curing time is selected in 10-second increments and is displayed on the back of the pistol grip. A selection of 0 seconds allows manual control of curing time. A built-in radiometer indicates proper intensity with a green light. **Hilux 250 Curing Light** can be installed on a countertop or wall-mounted. Light guides are available in angled 11-, 8- and 3-mm diameters and a tapered 13- to 8-mm **Accelerator Tip**, which is said to increase power output by 30%. **Hilux 250 Curing Light** was evaluated by 6 consultants over a 6-month period.

Suggested Retail Cost: \$495.00

Equipment Features

Consultants unanimously rated **Hilux 250 Curing Light** as one of their favorites. Overall ease of use, including controls, changing tips, weight and balance of the light, received excellent ratings. The built-in radiometer was



considered a useful feature, although the readout is simply a green light with no quantitative measurement of intensity. The handle has a built-in indicator light to show the "on/off" status of the curing light, and most consultants commented favorably on this feature. The pistol grip remains cool during operation even with extended periods of use. Setting the curing time is easy, and the acoustic signal (beep) is unobtrusive. One-hundred percent of consultants would purchase and recommend this unit.

Consultants' Comments

- ▶ "I like the on/off indicator light."
- ▶ Nice features, reasonably priced.
- ▶ "This is my favorite light-curing unit."
- ▶ Lightweight unit.
- ▶ Curing tip is easy to swivel.
- ▶ Fan is somewhat loud, even when the unit is not in use.

Need C.E. Credits or a Guest Speaker? – Dr. Farah

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Las Vegas, Nevada	2/4/00	First District New York County Dental Society	5/24/00
Western Division of the Detroit District Dental Society, Michigan	3/14/00		

Dr. John Farah, editor of THE DENTAL ADVISOR and a full-time practicing dentist, will present a continuing education seminar entitled "Shared Secrets: The Newest Materials for Your Practice." For more information on attending one of these seminars, or to schedule Dr. Farah to speak to your dental group, please call: 800.347.1330, 734.665.2020. You can also e-mail: info@dentaladvisor.com, or visit our web site at www.dentaladvisor.com