

# Break routines

Stress. Fear. Boredom. These are not the emotions you were expecting when you became a dentist and business owner. You imagined enjoying the pride of a day's work and the confidence of controlling your own destiny. What happened?

What happened is that you were never taught how to run a business in the first place. Dentistry's clinical demands are so taxing that it rarely leaves time and energy for paperwork. It's easy to fall into a daily routine that turns into an annual routine that turns into years spent just treading water.



Let's turn that around right now.

Faithful readers of *Dental Economics* and our e-newsletter, *DE's Expert Tips and Tricks*, enjoy the business lessons that have a positive impact on our practices. But for the first time ever, we're hosting an event that will comprehensively review the basics of business: *DE's Principles of Practice Management*. Look for my article on page 14 to learn more about this one-of-a-kind opportunity.

This month, we welcome one of my clinical idols, Dr. Michael Sesemann. As a young clinician, I would read his published case studies and think, "Oh, so *that's* what a Class II restoration should look like!" I would also like to highlight the start of a quarterly installment on medical billing by Dr. Erin Elliott. She's a gifted author and speaker who has taken the sleep apnea world by storm. Her new series shows us how to actually get paid doing this as well as other dental procedures that can qualify for medical reimbursement.

Both of these authors help illustrate my point that routines are a practice killer. Dr. Sesemann achieves outstanding results in 2016 (just as he did when I read his material in 2006), because he breaks routines. He tests new materials and techniques. Dr. Elliott has transformed her practice into a sleep apnea powerhouse because she breaks routines. She trailblazes new ways for patients to afford their care.

I should clarify that there is a difference between a system and a routine. Systems are periodically tested, evolved, and proven. Routines are the things we do just because we did them that way yesterday. Let's enjoy the delightful snapping sound of an old routine being broken. Let's draw up designs for a brand-new system that will relieve stress, conquer fear, and, most certainly, make things interesting.

Cheers,

**CHRIS SALIERNO, DDS**

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# Realizing efficient and predictable posterior restorations

by combining selective etching, universal adhesive, and bulk-fill composite

Michael R. Sesemann, DDS, FAACD

**IT'S NOT UNCOMMON** for patients who are middle-aged or older to present with multiple failing amalgam restorations in a single quadrant. Many of these restorations can be replaced conservatively with direct composite. Unfortunately, however, many of the placement and accompanying adhesive protocols required for predictability can be time-consuming and technique sensitive. That's why it's important to understand the historical development of adhesive dentistry when considering today's etching and adhesive protocol options to determine which will serve you—and your patients—best.

## IN THE BEGINNING

More than 50 years ago, Michael G. Buonocore, DMD, proposed bonding to enamel and dentin by treating those surfaces with phosphoric acid before applying bonding agents, which was shown to increase adhesion.<sup>1</sup> Although he considered resin tag formation in the microporosities of etched enamel to be principally responsible for adhesion to enamel, bonding to dentin was less predictable due to dentin's composition, water content, and smear layer.<sup>2</sup> Not surprisingly, the first dental adhesives were resins that bonded only to enamel; there was little to no dentin bonding.<sup>3</sup> Ongoing changes in material composition, adhesive mechanisms, application methods, and overall adhesive techniques fueled the evolution of adhesive dentistry and the introduction of increasingly esthetic direct and indirect restorative materials.<sup>4</sup> These changes also led to different adhesive etching products and protocols.

## TOTAL-ETCH (ETCH-AND-RINSE) TECHNIQUE

In the total-etch (etch-and-rinse) technique, both enamel and dentin are etched with phosphoric acid to remove the smear layer and condition the preparation prior to bonding (the enamel is etched longer than the dentin). The etchant

and smear layer are then rinsed off with water and gently air-dried. Because dentin should remain moist and glossy in appearance, care must be taken not to overdry the dentin. This prevents collagen fibrils from collapsing, which would create a less permeable surface for hydrophilic monomers in the adhesive, as well as a weak interface that could lead to a poor bond and postoperative sensitivity. Although total-etch adhesives and their associated multistep techniques are well established and clinically proven, they are often considered to be technique sensitive.

## SELECTIVE-ETCH TECHNIQUE

With selective etching, only the enamel edges of the preparation are etched with phosphoric acid and rinsed with water. The dentin is conditioned afterward with either an acidic primer or an all-in-one self-etching adhesive. The primer application modifies the smear layer without removing it. Using the selective-etch technique could be problematic if the dentin is inadvertently etched and then etched again with a sixth- or seventh-generation self-etching adhesive, because overetching the dentin could result in reduced bond strength and postoperative sensitivity.

## SELF-ETCH TECHNIQUE

Intended for adhesive bonding without separate etching, the self-etch technique relies on adhesive materials containing acidic monomers that etch and prime both enamel and dentin. With a milder pH level than total-etch products, self-etch adhesives pose less risk for excessive dentin demineralization. Because the technique-sensitive step of precisely drying the dentin is eliminated, collagen-fiber collapse is prevented. Combined, these attributes reduce the likelihood of postoperative issues.

**REALIZING PREDICTABLE EFFICIENCY TODAY**

Manufacturers have helped to streamline adhesive protocols by introducing universal adhesives that promote high bond strength to enamel and dentin and that can be used on both dry and moist dentin. Because they are designed to work with or without phosphoric acid, universal adhesives (e.g., Adhese Universal from Ivoclar Vivadent) are suitable for all etching techniques without the risk of overetching the dentin.

When replacing multiple failing amalgam restorations in a single quadrant using direct composite, I prefer the selective-etch technique because it delivers the best of both worlds: It provides strong micromechanical retention at the enamel margin with less probability of postoperative sensitivity since the dentinal tubules are not completely opened. My preferred adhesive for this is Adhese Universal, which is available in traditional bottle delivery and VivaPen delivery.

For me, the ergonomic, penlike VivaPen design and angled-brush cannula enhance comfort, control, and speed during direct intraoral application while reducing material waste. Containing 2 mL of adhesive, the VivaPen can accommodate approximately 190 single-tooth applications—almost three times the applications per milliliter compared to conventional bottle delivery. As a result, the Adhese Universal VivaPen cost per application is lower than all other leading universal adhesives. With virtually no waste, the VivaPen dramatically decreases cost per application, contributing to more cost-effective treatments.

Using a bulk-fill composite also contributes to more cost-effective and time-efficient direct posterior restorations (e.g., Tetric EvoCeram Bulk Fill and Tetric EvoFlow Bulk Fill from Ivoclar Vivadent). Because bulk-fill composites can be placed in a single increment of up to 4 mm and can be fully cured, they help eliminate time-consuming techniques and ensure

long-term clinical success by preventing secondary caries, postoperative sensitivity, and microleakage.

The case outlined in Figures 1–5 illustrates how selective etching, universal adhesive, and bulk-fill composite can be combined for efficient and predictable posterior quadrant restorations:

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**Figure 1:** A 51-year-old male patient presented with multiple failing side-by-side amalgam restorations in Nos. 2 through 5 that exhibited marginal leakage, requiring replacement.



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**BULK EZ BULK-FILL COMPOSITE BY DANVILLE MATERIALS**

Michael A. Miyasaki, DDS

I switched to a bulk-fill composite material because of Danville Materials's Bulk EZ. Here's why: In the past, I used the layering technique for posterior direct restorations to get a good marginal seal, be assured of a fully cured restoration, and control the shrinkage stress by minimizing the volume cured at any one time. Bulk EZ does all of this but faster. Bulk EZ improves my marginal seal at the deepest gingival floor and minimizes shrinkage stress by self curing. The self-cure property also provides unlimited curing depth, reducing the chance of sensitivity. No special equipment is needed to place Bulk EZ, and it can be placed in 75% of the time. Due to Bulk EZ's proprietary chemistry, you can use any and all adhesives after preparing the tooth. Using a matrix system, such as Danville's MegaV, gives me perfect contacts every time. Place the Bulk EZ syringe tip in the deepest area of the preparation and fill from the bottom and across the occlusal. I add a little to raise the marginal ridge. When the material is in its gel phase, I place the occlusal anatomy with my explorer; in 90 seconds, the restoration is finished. **DE**



**MICHAEL A. MIYASAKI, DDS**, is an active dental practitioner who has been involved in dental education for nearly 30 years. He is the chief dental officer of Danville Materials and the director of education for the Pacific Aesthetic Continuum, which conducts live-patient treatment programs across the United States.

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\*"Generation Adhesives" (Poster: H. Lu et al. IADR 2008, Abstract #0401)  
\*\*"Comparison of 5th Generation Total-Etch Adhesives" (Summary Table)

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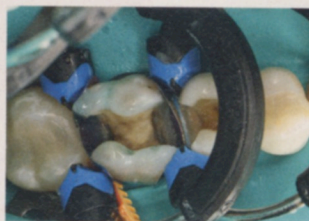
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**POSTERIOR QUADRANT RESTORATIONS** *Continued from p.75*



**Figure 2:** Hygienic nonlatex rubber-dam isolation was established; the existing amalgam restorations and decay were removed; and the preparations were refined, cleaned, and disinfected.

**Figure 3:** A segmented matrix setup with two Composit-Tight 3D-XR rings (Garrison Dental Solutions) and a 5.5-mm Slick Band (Garrison Dental Solutions) was placed on No. 3. Then, the preparation enamel was selectively etched with 37% phosphoric acid etchant with benzalkonium chloride (Bisco) for 20 seconds.



**Figure 4:** A universal adhesive was scrubbed for 20 seconds, air thinned, and light cured for 10 seconds. A layer of Tetric EvoFlow Bulk Fill was placed up to the proximal box and to the pulpal floor, then light cured for 10 seconds. After light curing, the bulk-fill composite exhibited a dentinlike opacity, helping to mask the discolored dentin.



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**Figure 5:** The restorations for Nos. 2 through 5 were completed with Tetric EvoCeram Bulk Fill in shade IVA. **DE**



**REFERENCES**

1. Buonocore MG, Matsui A, Gwinnett AJ. Penetration of resin dental materials into enamel surfaces with reference to bonding. *Arch Oral Biol.* 1968;13(1):61-70.
2. Perdigão J. Dentin bonding as a function of dentin structure. *Dent Clin North Am.* 2002;46(2):vi, 277-301.

3. Buonocore MG. Retrospections on bonding. *Dent Clin North Am.* 1981;25(2):241-255.
4. Van Meerbeek B, De Munck J, Yoshida Y, et al. Buonocore memorial lecture. Adhesion to enamel and dentin: current status and future challenges. *Oper Dent.* 2003;28(3):215-235.



**MICHAEL R. SEEMANN, DDS, FAACD**, received his dental degree from the University of Nebraska Medical Center College of Dentistry in 1981. After becoming an accredited member of the

American Academy of Cosmetic Dentistry (AACD) in 1999, he became the 35th fellow of the Academy in 2004 and was the 23rd president to serve the organization from 2009-2010. He enjoys being an adjunct faculty and advisory board member for the Kois Center and the restorative editor for the *Compendium of Continuing Education in Dentistry*.

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operator, checking inventory of dental supplies and materials, becoming familiar with the schedule for the following day, and documenting clinical notes in the patient chart.

**PROMOTE AND PRIORITIZE TEAMWORK**

If an assistant or hygienist appears to be falling behind in his or her schedule, another team member may be able to assist with processing instruments, operatory breakdown, or preparation. As team members review the daily schedule, moments of need may be anticipated. In these instances, assistance from another team member may be requested in advance. Some dental facilities have the advantage of a hygiene assistant or a sterilization technician who may help in such circumstances. By working as a team, efficiency may be enhanced and productivity improved during patient care.

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