ZOOM IN: AMED INSIGHTS

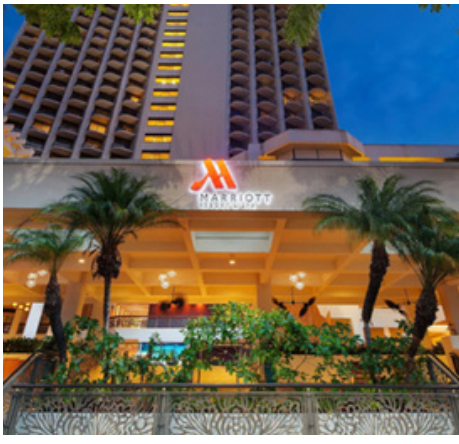
March 2026

Todd Goldman
AMED Executive Director

A Transformative Event Awaits:

AMED is planning an event like never before in 25 years since our inception. Our Annual Meeting in Hawaii will be focused on high magnification married with Biomemtic Dentistry.

The event will happen in Honolulu at the Waikiki Marriott on November 5-8, 2026. The speakers are second to none: Drs. Ali Sadr, Simone Deliperi, Junji Tagami, Keiichi Hosaka, David Alleman, Sheppard Bryant, Masaki Tsujimoto, Judy McIntyre, Meiken Hayashi, Hiroyuki Sekiguchi, Kuo (Brian) Yi-Chia, Marco Carvalho, Juan Carlos Ortiz Hugues, Shepard DeLong, Davey Alleman, and Dan Clementino.



This program can take your practice in a new direction and offer something that few dentists offer in your market; and it is something that patients are seeking out. In a time where the DSOs are closing in on your market, offering something unique and truly better creates its own marketing. Our partners in this event include the Academy of Biomimetic Dentistry and the Japanese Academy of Microscope Dentistry. The Academy of Laser Dentistry will also offer a 2 day laser certification program during the event and the Western Society of Periodontology will offer a hygiene collaborative.... So bring your team for a great experience.

Our speakers will be offering lectures and hands-on training for our attendees at a very reasonable price.

Registration opens up April 1st and this meeting is no joke. Take your practice and career in a new, more profitable direction.

We hope to see you in Honolulu this November.

Best Regards,

Todd Goldman

Executive Director

The Academy of Microscope Enhanced Dentistry

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March 12, 2026 7PM EST

Presented By: Dr. Cosimo Pilolli

Other Upcoming Webinars

Rubber Dam Isolation for Restorative Procedures

Learn practical rubber dam isolation techniques, armamentarium selection, and problem-solving strategies to improve moisture control, visibility, and restorative outcomes.

April 23, 2026 7PM EST

Presented By: Dr. Jorge L. Garaicoa

Restoring the Endodontically Treated Tooth Using Biomimetic Principles

Learn how biomimetic principles, modern technology, and evidence-based techniques can improve the longevity of endodontically treated teeth.

May 4, 2026 7PM EST

Presented By: Dr. Mark Limosani

Universal Adhesives and Immediate Dentin Sealing: Promise and Perspective

Anna Paholiouk, DDS

Dr. Anna Paholiouk is a restorative dentist and educator practicing in Orange County, California, with a clinical philosophy centered on minimally invasive advanced adhesive dentistry rooted in biomimetic principles. She is committed to the preservation of natural tooth structure and evidence-based restorative care in both clinical practice and academic teaching.

Abstract

The shift in restorative dentistry toward tissue preservation has made Immediate Dentin Sealing (IDS) an integral component that influences treatment outcomes. IDS has historically been associated with multi-step etch-and-rinse adhesive systems. With the advancement of universal adhesives, they have become very popular among clinicians due to their simplicity of application. There is now a question regarding their suitability for the IDS protocol.

This article reviews the biological and mechanical rationale behind IDS and the concept of reinforced IDS as a strategy to increase mechanical protection and stress distribution. A recent 2025 meta-analysis concluded that universal adhesives demonstrate similar clinical performance to conventional multi-step systems. However, data beyond five years remain limited. Although universal adhesives show promising results, material selection remains critical for a technique-sensitive step like IDS.

Introduction

Over the past decade, dentistry has increasingly prioritized preservation of natural tooth structure. Advances in materials science, the shift from air-driven to electric handpieces, and the routine use of magnification have transformed our daily workflow. These tools allow clinicians to work with greater precision, practice minimally invasive dentistry, and deliver more predictable, longer-lasting restorations. What was once progressive is quickly becoming the standard of care.

Immediate Dentin Sealing (IDS) is a fundamental step in this philosophy. Earlier work in 1980–2000 in Japan, notably by Nakabayashi, Nikaido, and Tagami, explored concepts of dentin hybridization and resin coat application techniques. [1,2] A clinical protocol and the name IDS were formalized by Magne in 2005 and 2007. [3,4]

Nearly two decades later, IDS remains closely associated with multi-step adhesive systems such as three-step etch-and-rinse systems and two-step self-etch systems. [3,4] These are widely regarded as gold-standard adhesives. However, recent developments in universal adhesives have attracted many clinicians largely because of their simplicity and time efficiency. In some settings, universal adhesives may be the only materials available. This naturally raises a practical question: Is the IDS technique material-dependent? Can universal adhesives be used predictably for Immediate Dentin Sealing?

The original IDS protocol described by Magne utilized OptiBond FL, a highly filled, fourth-generation three-step etch-and-rinse adhesive. [3] Because of its filler content, the adhesive layer is more uniform and approximately 80 µm thick, creating a stable and protective coating over freshly cut dentin. However, not all clinicians are comfortable with the total-etch approach, particularly in deep dentin. For this reason, some clinicians prefer two-step self-etch systems. Clearfil SE Bond, for example, produces an adhesive layer approximately 40 µm thick. Universal one-bottle adhesives are even thinner. While clinically convenient, this thinner layer may be more susceptible to disruption during provisional removal and preparation cleaning prior to final delivery with pumice or air abrasion, increasing the risk of partial adhesive loss and dentin re-exposure. Adhesive layer thickness affects not only resistance to mechanical abrasion but also the long-term stability of the hybrid layer.

To compensate for reduced adhesive thickness and reinforce the IDS layer, thinner adhesive systems can be supplemented with approximately 0.5 mm of flowable resin composite. This concept, known as reinforced IDS, has been described as a strategy to improve mechanical protection and stress distribution at the bonded interface. [5] The low elastic modulus of the flowable composite improves stress modulation during polymerization and provides additional protection for the hybridized dentin.

A 2025 meta-analysis of 15 randomized clinical trials reported no statistically significant difference in short- to medium-term clinical performance between universal, etch-and-rinse, and self-etch adhesives. [6] However, follow-up periods ranged from six months to four years. These findings are promising, especially in clinical settings where access to multi-step adhesive systems may be limited. At the same time, multi-step systems supporting IDS have been clinically validated for nearly two decades. [3,4]

Conclusion

While recent data on universal adhesives are encouraging, long-term success beyond five years has yet to be established through continued independent research and time-tested clinical performance. Evidence takes time.

Figure 1. *The pre-operative and post-operative occlusal views of the upper left quadrant under rubber dam isolation.*

The top photo shows teeth #13, #14, and #15 with failing amalgam restorations. Tooth #14 is structurally compromised and presents with several fracture lines involving the distal marginal ridge, the oblique ridge, and the distopalatal cusp.

The bottom photo shows the final restorations. Tooth #13 was restored with a direct MOD composite. Tooth #14 was restored with IDS and a lithium disilicate onlay (IPS e.max Press, Ivoclar Vivadent AG, Schaan, Liechtenstein). Tooth #15 was restored with a direct occlusal composite.

Figure 2. *The top photo shows tooth #13 after completion of the direct MOD restoration.*

The bottom image shows tooth #14 after amalgam removal, caries removal using caries detection dye (Kuraray Noritake Dental Inc., Tokyo, Japan), crack dissection, and preparation design. The dentin was then treated with air abrasion using 27-micron aluminum oxide particles (CrystalMark Dental Systems, Glendale, CA, USA).

Figure 3. *The top photo shows reinforced IDS completed with the Clearfil SE Protect adhesive system (Kuraray Noritake Dental Inc., Tokyo, Japan) and a 0.5 mm resin coating using Clearfil Majesty Flow composite (Kuraray Noritake Dental Inc., Tokyo, Japan). The tooth was cleaned with air abrasion and 35% phosphoric acid etchant (Ultradent Products Inc., South Jordan, UT, USA) for 20 sec. after removal of the provisional restoration, then rinsed and dried.*

The bottom image shows the delivery step. The onlay was delivered using heated Clearfil AP-X composite. The onlay intaglio surface was treated with 4% hydrofluoric acid for 20 sec. (Ivoclar Vivadent AG, Schaan, Liechtenstein), 35% phosphoric acid for 10 sec., and then placed in an ultrasonic water bath for 5 min. Teflon tape was placed around tooth #14 to prevent bonding and composite extrusion in the cervical area. It was wrapped around the adjacent teeth for isolation and positioned interproximally to facilitate composite clean-up using a pull-through technique.

Figure 4. *The top photo shows the occlusal view of the completed restorations on teeth #13, #14, and #15.*

The bottom image shows the buccal view of the teeth with the definitive restorations.

References

1. Nakabayashi N, Kojima K, Masuhara E. The promotion of adhesion by the infiltration of monomers into tooth substrates. *J Biomed Mater Res*. 1982;16(3):265–273.
2. Satoh M, Gotoh H, Inai N, et al. How to use “Liner Bond System” as a dentin and pulp protector in indirect restorations. *Adhes Dent*. 1994;12(1):41–47.
3. Magne P, Kim TH, Cascione D, et al. Immediate dentin sealing improves bond strength of indirect restorations. *J Prosthet Dent*. 2005;94(6):511–519.
4. Magne P, So WS, Cascione D. Immediate dentin sealing supports delayed restoration placement. *J Prosthet Dent*. 2007;98(3):166–174.
5. de Carvalho MA, Lazari-Carvalho PC, Polonial IF, et al. Significance of immediate dentin sealing and flowable resin coating reinforcement for unfilled/lightly filled adhesive systems. *J Esthet Restor Dent*. 2021;33(1):88–98. doi:10.1111/jerd.12700.
6. Patias MP, Fernandes e Silva P, Villareal Carreño NL, et al. Comparative clinical performance of universal adhesives versus etch-and-rinse and self-etch adhesives: a meta-analysis. *Clin Oral Investig*. 2025;29(7):352. doi:10.1007/s00784-025-06427-w.

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