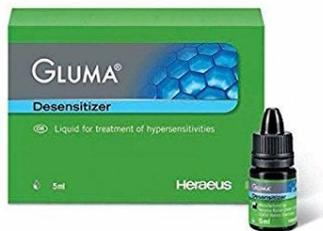


[Your Dental Solutions Newsletter](#)

2018 Dental Products: Must Have Materials/Products for Every Office

In the second edition of Your Dental Solutions Newsletter, I will highlight the list of dental products/materials that, as a restorative specialist, I feel are vitally important to patient care on a daily basis. As clinicians, we all desire to provide patients with efficient predictable outcomes. Having specific products and tools readily available allows us to have consistent and predictable workflows but also, they allow us to adapt to changing and difficult treatment situations. Having predictability in our daily treatment is essential to a successful practice.

ADHESIVE:



Glutaraldehyde Dentin Desensitizer: The active component in Gluma (Heraeus Kulzer) OR MicroPrime G is glutaraldehyde. When applied to dentin it causes precipitation of crystals in the dentinal tubules which decreases post-operative sensitivity via the hydrodynamic theory. It also cross-links and deactivates dentinal MMP's which prevent degradation of the dentin bond improving bond strengths.

Micro Etcher: The micro etcher if used before acid etching during a bonding procedure can provide a 50% increase in bond strength. It is also useful when preparing metal crowns for delivery to provide a clean internal surface for luting. It can be used to prepare small carious lesions without anesthesia.



MDP Bonding System: 10-methacryloyloxydecyl dihydrogenphosphate (MDP) is the monomer that is currently used in some bonding systems such as Scotch Bond Universal (3M) Adhese univseral (Ivoclar), Monobond (Ivoclar Vivodent) which is a restoration primer, or Panavia V5 ceramic primer (Kurray Dental). The MDP monomer allows bonding to lithium discilicate, ziroconia, and metal.



Bulk Fill Flowable Resin: Bulk fill flowable resins have low contraction shrinkage and are able to be cured in thicker layers. The low contraction shrinkage can be beneficial when placing direct restorations such as a class 2 preparation. This is used as the very thin first layer of resin around the apical margins. This will minimize contraction shrinkage at the margin and ensure the matrix is sealed to the tooth. Bulk fill will also increase efficiency by allowing thicker layers of restorative material to be placed (up to 4mm) and cured completely.



Rubber Dam: Proper isolation is essential to achieving ideal bonding in everyday practice. Rubber dam use has been shown to increase shear bond strength and reduce marginal leakage versus cotton roll isolation ^{9,10}. At a minimum consider incorporating the use of an Isolite system.

Esthetic Resin Luting Agent: The options for auto polymerizing resin-luting agents are improving. Previously the amine molecule that induced the cure of the resin was not color stable over time. New amine free self-cure molecules are color stable over time. This means that resin luting agents such as Panavia V5 (Kurray Dental) or Variolink Esthetic (Ivoclar Vivodent) can be used to lute anterior and posterior restorations without the concern of marginal color change.



Miscellaneous:



Digital Camera: Digital photography is an essential tool for data gathering as well as communication with the patient, other doctors, and the laboratory. There is a vast amount of information that gets realized when we look at photographs that are not realized when looking at the patient. It is also useful to have a photographic history of the patient's initial situation and where they ended after treatment was finished.

Shimstock: The complexity of therapy that we are able to offer our patients is increasing every day. Shimstock is 8-12 microns thick and is used to verify occlusal contacts. Articulating film such as accufilm is 20 microns thick and can produce false positive occlusal contacts. This becomes very important when adjusting occlusion on implants. Occlusal contacts should be adjusted using articulating film and then verified with shim stock.



MI Paste One: As our patient population ages we are seeing more patients with an increased list of medications. Many of these medications will induce xerostomia which results in an increased risk for dental caries. MI Paste has amorphous calcium and fluoride which is used in patients with an increased caries risk as part of the CAMBRA protocol.

Retraction cord: When bonding restorations or making impressions this is essential for fluid isolation and gingival retraction. It is also important that the cord is a dark color which helps to see the cord and ensure all cord material is removed from the sulcus after bonding procedures.



Resin Pulpal Protection: Two common materials used for pulpal protection are TheraCal LC (Bisco Dental) and Lime lite (Pulpdent). These protect the pulp from phosphoric acid and stimulate secondary dentin formation when used as an indirect pulp cap. They also bond directly to the direct resin.

I hope that you enjoyed the second bi-monthly issue of “Your Dental Solutions Newsletter.”

Mark C. Nation DMD, Prosthodontist, Advanced Dental Solutions

Citations

- Desai V, Bumb D. Digital Dental Photography: A Contemporary Revolution. *Int J Clin Pediatr Dent* 2013;6(3):193-196
- Manuja N * / Nagpal R ** / Pandit IK. **Dental Adhesion: Mechanism, Techniques and Durability.** *J Clin Pediatr Dent* 36(3): 223–234, 2012
- Jorge *Perdigão*. **Dentin bonding—Variables related to the clinical situation and the substrate treatment.** *Dent Mater.* 2010 Feb;26(2):e24-37. doi: 10.1016/j.dental.2009.11.149. Epub 2009 Dec 14.
- Knobloch LA*¹, *Meyer T*, *Kerby RE*, *Johnston W*. Microleakage and bond strength of sealant to primary enamel comparing air abrasion and acid etch techniques. *Pediatr Dent.* 2005 Nov-Dec;27(6):463-9.
- Pediatr Dent.* 2005 Nov-Dec;27(6):463-9. *Pediatr Dent.* 2005 Nov-Dec;27(6):463-9. International Journal of Pediatric Dentistry Vol. 11 Page 409, 11/2001
- Featherstone JD, Domejean-Orliaguet S, Jenson L, Wolff M, Young DA. Caries risk assessment in practice for age 6 through adult. *J Calif Dent. Assoc.* 2007;35(10):703-713
- Yokesh, CA Anand et al. “Comparative Evaluation of the Depth of Cure and Degree of Conversion of Two Bulk Fill Flowable Composites.” *Journal of Clinical and Diagnostic Research : JCDR* 11.8 (2017): ZC86–ZC89. *PMC.* Web. 23 Feb. 2018.

8. Agarwal, Rolly Shrivastav et al. "Evaluation of Cervical Marginal and Internal Adaptation Using Newer Bulk Fill Composites: An *in Vitro* Study." *Journal of Conservative Dentistry : JCD* 18.1 (2015): 56–61. *PMC*. Web. 23 Feb. 2018.
9. Barghi N, Knight GT, Berry TG. Comparing two methods of moisture control in bonding to enamel: a clinical study. *Operative Dentistry*. 1991;16(4):130–135.
10. Knight GT, Berry TG, Barghi N, Burns TR. Effects of two methods of moisture control on marginal microleakage between resin composite and etched enamel: a clinical study. *International Journal of Prosthodontics*. 1993;6(5):475–479.