Dear Members,

Due to space shortage, just a few lines to let you know that the IAAD is constantly working towards reaching our objectives.

• We have created a membership certificate. We are currently working on having it delivered expeditiously and economically to you members.
• We will send you an official receipt for payment of dues.
• We have installed membership access on the website.

We will send 2 practitioners to lecture and 2 chairmen to the IAAD session of the IAD in Bangkok, 30-31 January, 2015.
• To prepare the program for our first meeting in Orlando on 11-12 September, 2015, Dr. Jin-Ho Phark, University of Southern California, has joined the team. I hope this helps keep you up-to-date.

Sincerely yours

Jean-François Roulet, President IAAD

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International Academy for Adhesive Dentistry (IAAD)

Universal or Multi-mode Adhesives: Why and How?

Jorge Perdigãoa / Alessandro D. Loguerciob

IAAD WORKING INSTRUCTIONS

A new generation of one-bottle dental adhesives is currently being used. The literature refers to them as universal or multi-mode adhesives (UA). UA are indicated as either self-etching (SE) or etch-and-rinse (ER) adhesives. Additionally, manufacturers also recommend an alternative “selective enamel etching” technique.

Some UA contain 10-MDP (methacryloyloxydecyl dihydrogen phosphate), which has been shown to bond ionically to hydroxyapatite through nanolayering.18 Taking into account that MDP-mediated nanolayering may be responsible for the clinical success of the two-step SE adhesive Clearfil SE Bond (Kuraray) at 8 years,11 expectations exist regarding the clinical success of MDP-containing UA. Nevertheless, etching dentin with phosphoric acid removes calcium, leaving behind a 2- to 5-μm-thick area of denuded collagen fibers. It is not clear at this point if (and how) MDP-containing adhesives are able to bond ionically to calcium-deprived etched dentin through nanolayering.

Clinical studies and laboratory evaluations have, in fact, demonstrated that some UA may perform at the same level of previous materials.1,3,5,10 However, enamel etching with phosphoric acid removes calcium, leaving behind a 2- to 5-μm-thick area of denuded collagen fibers. It is not clear at this point if (and how) MDP-containing adhesives are able to bond ionically to calcium-deprived etched dentin through nanolayering.

A deep enamel etching pattern is only achieved when enamel is etched with phosphoric acid7 for the UA All-Bond Universal (3M ESPE) were 28.7 MPa (self-etching) and 40.1 MPa (etched enamel).9 Even when UA are applied with a rubbing motion on enamel, bond strengths are lower than those obtained to etched enamel (Fig 1, unpublished data). A deep enamel etching pattern is only achieved when enamel is etched with phosphoric acid7 for the UA All-Bond Universal

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a Professor, Department of Restorative Sciences, University of Minnesota, Minneapolis, MN, USA.
b Professor, Department of Restorative Dentistry, State University of Ponta Grossa (UEPG), Ponta Grossa, Paraná, Brazil.

correspondence: Professor Jorge Perdigão, Department of Restorative Sciences, University of Minnesota, 515 SE Delaware St, 8-450 Moos Tower, Minneapolis, MN, USA. Tel: +1-612-624-8486, Fax: +1-612-625-7440. e-mail: perdi001@umn.edu
Dentin after 12-month water storage when applied either to bond degradation. In fact, UA showed signs of degradation across the resin/dentin interface, which leads to semi-permeable membranes, allowing fluid transudation across the resin/dentin interface, which leads to bond degradation. Most two-step ER adhesives also contain water and organic solvents to help infiltrate demineralized dentin. The hydrophilicity of simplified adhesives makes them be- drophilic acidic monomers when used as SE adhesives. Two-step ER adhesives also contain water and organic solvents to help infiltrate demineralized dentin. The hydrophilicity of simplified adhesives makes them behave as semi-permeable membranes, allowing fluid transudation across the resin/dentin interface, which leads to bond degradation. In fact, UA showed signs of degradation after 12-month water storage when applied either as SE or ER adhesives. In spite of the simplification of the bonding protocol with UA, they will likely undergo the same degradation pattern observed with older simplified adhesives.

**REFERENCES**