

“Dental Myths & Controversies VII” Continuing Education Course

The Tenth Annual PROH Conference was held on Friday, October 18, 2013 at the World Trade Center in Portland. Topics for “Dental Myths & Controversies VII” were selected by surveying PROH members. Six select faculty from OHSU identified the opposing viewpoints, presented a review of the relevant research and their position on the topic based on their understanding of the evidence, and answered questions. Below is a summary of the course.



“Are we there yet? Can that laser really treat periodontal disease?” by Jim Katancik, D.D.S., Ph.D., Associate Professor and Chair of the Department of Periodontology.

While there may be promise for the future, evidence on laser usage to treat periodontitis is generally limited to case-report studies, with limited subjects, and short-term results. Research suggests that debridement is still necessary and that lasers may have promise in peri-implantitis cases. The 2011 statement by the American Academy of Periodontology includes the following: There is minimal evidence to support the use of a laser for subgingival debridement as a monotherapy or an adjunct to scaling and root planing; lasers are unpredictable and inconsistent in their ability to reduce subgingival microbes beyond that achieved by scaling and root planing alone; and Er:YAG lasers have been shown to remove calculus in vitro and to negate endotoxin, however in vivo use may damage the root surface. Attachment levels as compared to scaling and root planing alone are conflicting.



“CAD/CAM or traditional restorations: Maybe computers REALLY can do everything!” by Steven Gold, D.D.S., Assistant Professor in the Department of Restorative Dentistry and Group Practice Leader.

Dr. Gold cited a 2009 systematic review of the clinical performance of CAD/CAM single-tooth restorations. The mean exposure time was 7.9 years. CAD/CAM restorations had a 91.6% survival rate after 5 years while metal-ceramic crowns had a 95.6% survival rate for the same time period. A review of clinical studies from 1985 to 2006 showed a 97% survival rate for CAD/CAM restorations after 5 years and 90% survival rate after 10 years. The keys to successful CAD/CAM restorations are case selection, accuracy of the scan, material selection, cementing, and management of occlusion.



“Fluorides or fillings: What’s the best protocol for incipient/early caries?” by Juliana da Costa, D.D.S., M.S., Associate Professor in the Department of Restorative Dentistry and Restorative Dentistry Preclinical Director.

Incipient caries lesions is traditionally classified as those confined to the enamel with no penetration into the dento-enamel junction. Nonetheless, it is currently recommended to avoid surgical treatment of caries when they are just in dentin and unlikely to be cavitated. There is strong evidence supporting the treatment of early caries lesions with fluorides. Fluoridated toothpastes, rinses, gels, and varnish, pit and fissure sealants, and dietary improvement remain the mainstays of caries management. The current level of clinical evidence is not adequate to support the use of CPP-ACP as an alternative remineralization strategy. There is controversial evidence supporting the use of chlorhexidine and xylitol alone in reversing or stopping tooth caries. Resin infiltration has proven to be beneficial in treating early caries lesions.



“Splint design: Grinding out the facts.” by Scott Dyer, D.M.D., M.S., Ph.D., Adjunct Assistant Professor in the Department of Restorative Dentistry and private practitioner.

Occlusal appliances can be successful in allowing the TMJ orthopedic stability, introducing optimal occlusion, reorganizing neuromuscular activity, reducing abnormal muscle activity, encouraging normal muscle function, and protecting the teeth. Successes in occlusal splint therapy depend on proper appliance selection, proper fabrication and adjustment, and patient cooperation. Stabilization appliances are 70-90% effective however, the exact mechanism is unknown. Occlusal splint types with little or no evidence of being effective include anterior bite planes, soft or resilient appliances, posterior bite planes, and anterior positioning devices. Evidence indicates that pivoting devices do not unload the TMJ. Dr. Dyer gave numerous clinical tips on fabricating and adjusting occlusal splints.



“When you absolutely, positively have to restore below the gums, what do you use?” by Tom Hilton, D.M.D., M.S., Alumni Centennial Professor in Operative Dentistry and Director of the PROH Network.

There are a number of factors that affect success in subgingival, direct-placement restorations. Patient factors include the presence of active disease/inflammation, caries risk, oral hygiene, and esthetics; periodontal factors to evaluate are material-tissue compatibility, the impact on the periodontium, and re-attachment potential; dental materials factors to consider are the potential for biofilm/plaque formation due to surface roughness, adhesion to dentin (sealing and restoration retention), and resistance to recurrent caries. Current clinical studies of Class 5 restorations indicate that glass ionomer/resin-modified glass ionomer best meets the need for a material that provides good retention, marginal integrity and resistance to recurrent caries, while maximizing biocompatibility and potential for reattachment. However, GI/RMGI are weak and should not be placed in areas of occlusion, and are relatively susceptible to dissolution (compared to composite or amalgam) and therefore to surface roughening. In those situations where esthetics or function are of primary concern, the dentist should consider the open sandwich. Important follow-up factors are repolishing restorations, correcting marginal defects, and reinforcing oral hygiene.



“Stressing out over composite fill technique: Do bulk fill composites work?” by Jack Ferracane, Ph.D., Chair of the Department of Restorative Dentistry, Division Director of Biomaterials and Biomechanics and Co-Director of the PROH Network..

Incremental fill techniques for composites originated due to concerns over depth of cure and curing stresses. Current research is focused on bulk fill materials and techniques. In general, the materials cure to the manufacturers' claimed depths (typically 4+ mm), as long as the total energy delivered is $\geq 20 \text{ J/cm}^2$ (1000 mW/cm² for 20 seconds). Bulk fill composites generally show reduced contraction stress and cuspal deflection, especially those used as bases, due to their lower stiffness. They have physical properties that are equal or slightly lower than non-bulk-fill materials. Those designed as needing a capping material should not be placed as a final layer or sole restorative.