Evidence Based Treatment

Evidence based practice (EBP) is the conscientious use of current best evidence in making decisions about patient care (Sackett, Straus, Richardson, Rosenberg, & Haynes, 2000)

ADA: Evidence-based dentistry (EBD) is an approach to oral health care that requires the judicious integration of systematic assessments of clinically relevant scientific evidence, relating to the patient’s oral and medical condition and history, with the dentist’s clinical expertise and the patient’s treatment needs and preferences.

Composite Longevity

Tooth Location Effect - Premolars > Molars
Restoration Size Effect - Small > Large
Caries Risk Effect - Low > High

2014: JDR 10 yr systematic and meta analysis
AFR - 2.4% (1.6 - 4.5%)
2011: 22 yr survival (Brazil) - 1.5-2.2% AFR (P-50 and Herculie XR)
2006: 17 yr survival (Brazil) - 34% failure
2002 ClinNA, 2004 OperDent: Manhart

Cochran Reviews

Cochrane Reviews are systematic reviews of primary research in human health care and health policy, and are internationally recognized as the highest standard in evidence-based health care. They investigate the effects of interventions for prevention, treatment and rehabilitation.
Composite vs Amalgam

2014: Composite fails at nearly twice the rate of amalgam when used for restoration of posterior teeth.

What do I do?
- For premolars, I most often use composite.
- For molars, I use composite if I can keep it small and it's an initial lesion.
- I use amalgam if it is high caries risk patient or very large.
- I will use composite on large restorations if its long term temporary.

Adhesive Chemistry (1980)
- Carboxylic acid: 4 META, PMDM, NPG, PMGDM, NPG-GMA, PAA, NTG-GMA, Itaconic Acid.
- Phosphate ester: PENTA-CPDM, Phenyl-P, Bis-GMA-P.
- Hydroxy group: HEMA, HPMA.

Chlorhexidine Preserves Dentin Bonds
- In vivo studies:
- MTB not significant.

Enhanced Understanding of the Role of MDP
2 step SE adhesives look pretty good but GIs still out perform most adhesives

“Total-Etch” Systems
- 3 step is gold standard
- 2 step- most sensitivity prone
  - shorter dentin etching times
  - depth of hybrid layer not as important as completeness
- Avoid over-drying
  - 15 sec light scrub on dentin
  - give primers/adhesive time to penetrate
  - Use two layers (Sensitivity and complete penetration)
  - Air thin before curing- radiographic
  - Rewet with water, GLUMA, CHX etc.
- Use Fuji2LC base/liner

“Self-Etching” Systems
- 2 SE appear to be similar to 3 TE
- Poor enamel etching
  - Need to roughen enamel
    - Diamonds
    - Etch enamel only “the old days”
- Longer scrub times lead to better penetration
- 1 SE appears to be more prone to degradation
- Less post-op sensitivity