Cleaning and disinfection of teeth prior to luting procedure

Cleaning of the prepared tooth surfaces before luting of indirect restorations is the first step of an effective luting procedure. Removal of grease, debris and remnants of provisional cement can be easily done using pumice slurry. However it is also advised to disinfect the prepared tooth surface. This would supposedly reduce the possibility of bacterial growth under the restoration. On the other hand, some of these disinfectants may negatively influence the bond strength of luting solutions to the dental surface. That's why it's crucial to follow tooth cleaning and disinfection guidelines for the long-term success of the luting procedure. The following recommendations are applicable for GC luting solutions.

In all cases, always rinse and dry after cleaning the tooth.

Solutions for cleaning/ disinfecting tooth preparation	Effect/Action	Conventional glass ionomer	Resin-modified glass ionomer		Self-adhesive resin		Adhesive resin	
		Fuji I	Fuji PLUS (EWT)	FujiCEM 2	G-CEM Capsule	G-CEM LinkAce	G-CEM LinkForce	G-ænial Universal Flo
Pumice Slurry	Cleaning	✓	✓		✓		✓	
Hydrogen Peroxide (H_2O_2)	Disinfecting, hemostatic	✓						
Sodium hypochlorite (NaClO)	Disinfecting	✓	✓		✓		✓	
EDTA- based solutions*	Demineralizing	✓	✓				✓	
Chlorexidine- based solutions*2	Disinfecting, MMP-inhibiting	✓	✓		✓		✓	

- Hydrogen Peroxide releases oxygen, which inhibits the polymerization of resin-based materials.

- Alcohol should not be used since it dehydrates the surface, which can cause post-operative sensitivity and decrease of bond strength.

- EDTA promotes the partial removal of the smear layer. It does not affect the bond strength of GI's and RMGI's. Dentin Conditioner, Cavity Conditioner and Fuji PLUS Conditioner can be used for the same purpose with the advantage of improving the bond strength of GIs and RMGIs to dentin and enamel.

- Chlorexidine inhibits the action of metalloproteinases, host-derived enzymes responsible for the degradation of the bonding interface over time.

*(e.g. Ultracid F, Tubulicid Blue & Tubulicid Red)
*2(e.g. Consepsis, Consepsis scrub & Bisco cavity cleaner)
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