

**M U N I
M E D**

Restorative dentistry III. -feedback1

Principle of binding composite materials to hard dental tissues

– **Micromechanical**

Principle of binding composite materials to hard dental tissues

Describe the principle of micromechanical retention in enamel:

Acid etching creates microscopic spaces between enamel rods or in them

The bond flows inside and copolymerizes with the filling materiál.

Principle of binding composite materials to hard dental tissues

- Describe the principle of micromechanical retention in dentin:
- Acid etching removes smear layer, open dentin tubules and decalcifies the surface layer of dentin.
- What are problems in dentine in comparison to enamel regarding the bonding?
- Differences: less amount of minerals, always wet, variable composition.

How do bonding agents work in dentin?

- Primer is necessary
- What is primer?

A mixture of resins in a solvent (acetone, alcohol, water, alcohol plus water).

How do bonding agents work in dentin?

- How does primer work?

Amphiphilic character (hydrophilic and hydrophobic part) – flows into dentin (tubules and spaces between collagen fibres), the solvent evaporates and the hydrophobic part copolymerizes with the composite material

- Bond is necessary for enamel
- Primer and bond are necessary in dentin
- They can be together i one bottle

Selfetching adhesives – how many steps?

- Acidic primer
- No washing
- Variable pH – different thickness of the hybrid layer.

What the hybrid layer is ?

Step by step procedure – composite filling using acid etching

Step by step procedure – composite filling using selfetching adhesive systems

Glassionomer – composition, principle of retention

- Aluminium silicate glass
- Polymeric acid (polyacrylic, polymaleic)
water, tartaric acid

Principle of setting:

Acid – base reaction

Step by step procedure – glassionomer filling