

0122 Degree of conversion of dual-cure cements light-polymerized through various substrates

[A. TEZVERGIL](#), L.V.J. LASSILA, and P.K. VALLITTU, University of Turku, Finland

Objectives: This study was aimed to investigate the degree of monomer conversion of three dual-cure resin cements irradiated through various restorative materials or dentine. **Methods:** Dual-cure resin cements RelyX ARC (3M-ESPE), RelyX Unicem (3M-ESPE) and Variolink 2 (Ivoclar, Vivadent) was used for this study. The cements were mixed according to the manufacturer' instructions and placed under the discs (1.5 mm thickness) representing a metal restoration, composite restoration (Sinfony D A3), fiber-reinforced composite (FRC) (EverStick 1.0 mm+ 0.5 mm Sinfony D A3) restoration and dentin. Five specimens (0.6mm thick) for each group were irradiated through the discs for 40s (Optilux-501, 800 mW/cm²). Light polymerization of the dual-cure cement without the covering disc was used as control. Degree of monomer conversion (DC%) was determined by FT-IR/ATR spectrometry from the bottom of the cement. The infrared spectra were recorded at every 6 sec for fifteen minutes beginning after mixing the cements. **Results:** ANOVA revealed significant differences in DC% between the cements tested and the different restorations (p<0.05). The mean DC% (SD) were:

Cement	Light(control)	Laboratory composite	Metal	FRC	Dentine
Relyx ARC	78.5 (0.5)	75.8 (0.9)	60.3 (0.9)	77.2 (0.4)	72.8 (0.8)
Relyx Unicem	53.7 (0.9)	54.1(0.7)	28.7 (1.9)	57.1 (0.9)	49.78 (2.1)
Variolink 2	65.6 (0.6)	63.0 (1.1)	51.6 (1.2)	64.4 (0.8)	61.5 (1.7)

Conclusion: Light irradiation through FRC-disk revealed highest DC% among groups and was comparable to control. It can be concluded that the simulating material of the restoration significantly influence the DC% of the dual-curing cement underneath.

[Seq #16 - Dental Materials: Ceramics and Luting Materials](#)

9:00 AM-11:00 AM, Friday, 27 August 2004 Crowne Plaza Hotel SEDIR II

[Back to the Scientific Program Program](#)

[Back to the Joint Meeting of the Continental European, Israeli, and](#)

[Scandinavian \(NOF\) Divisions of the IADR \(August 25 -- 28, 2004\)](#)

[Top Level Search](#)