

# SCIENTIFIC REPORT

## Bifix QM – Clinical two-year study with IPS Empress II

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The use of ceramics to produce indirect restorations is wide spread given through the high degree of stability of this material. In addition to the very good physical properties, aesthetics also play a key role. IPS Empress II ceramics are produced by means of heat pressing. The framework ceramic is made from lithium disilicate and lithium orthophosphate. Following this, the layering ceramic, which is composed of fluorapatite, is applied to the framework ceramic. The fluorapatite crystals promote systematic adjustment of the optical properties (translucence, brightness and light dispersion of the layering materials). The clinical behaviour of IPS Empress II crowns combined with Solobond Plus / Bifix QM / Ceramic Bond attached onlays/inlays was examined at Marmara University (Istanbul) in a clinical two-year study.<sup>[1]</sup>

In the study presented here, the clinical behaviour of 28 onlays and 7 inlays was observed in 35 patients (3 premolars, 32 molars). The ceramic used was IPS Empress II (Ivoclar Vivadent), the combination Solobond Plus, Bifix QM and Ceramic Bond (all from VOCO) was used for adhesive luting. The restorations were assessed independently by two experienced dentists on the basis of the USPHS criteria<sup>[2]</sup> after 6, 12 and 24 months.

### Evaluation of the restorations after 2 years

Figure 1 shows the graphical representation of the results and base values after two years. For the sake of clarity, only the criteria that also describe the behaviour of the luting system are displayed.

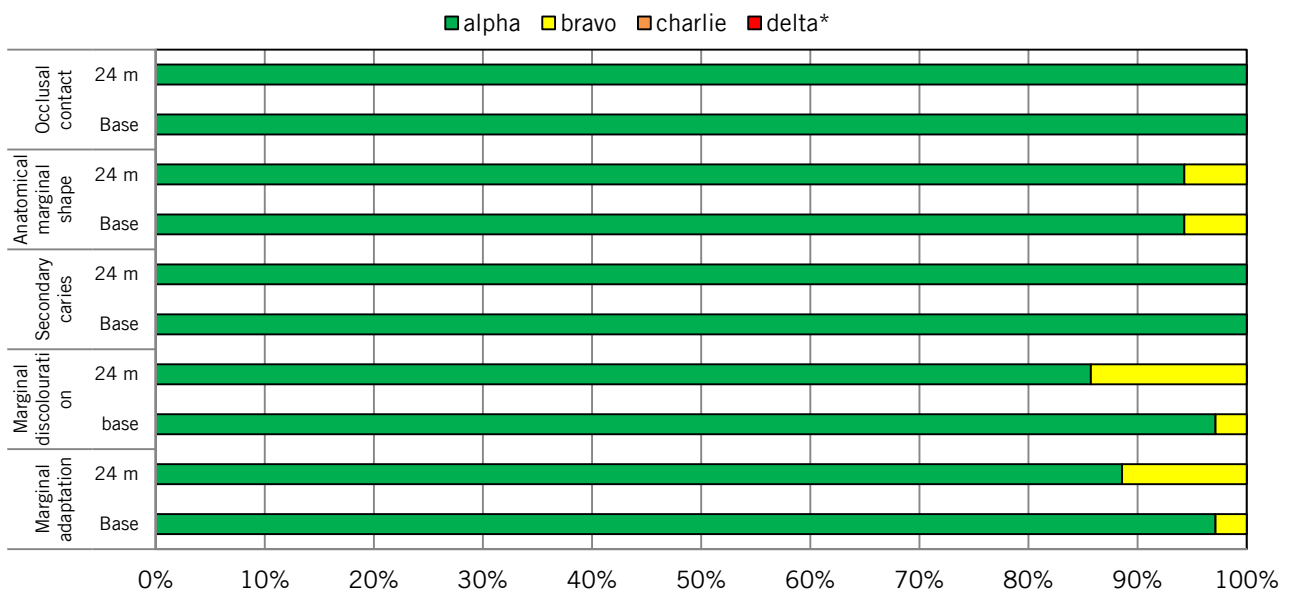


Figure 1: Evaluation of the inlay/onlay treatments after two years. (\* = category for marginal adaptation only)

After one restoration had to be re-fixed in the examination after six months, all restorations were intact after two years. Secondary caries did not occur in the entire examination period, which is a good indication for a restoration with marginal integrity. Overall, at least a clinically acceptable result (Bravo) was achieved in all test criteria, whereby on average 90% of the restorations in the individual categories showed clinically perfect results.

**Luting of indirect restorations made of IPS Empress 2 (lithium disilicate and lithium orthophosphate and fluorapatite) with Solobond Plus, Bifix QM and Ceramic Bond produced first-class results in the observation period shown here.**

[1] D. A. Tagtekin, G. Özyöney, F. Yanikoglu, *Oper. Dent.* **2009**, *34*, **369-378**.

[2] a) K. J. Anusavice, *Quality Evaluations of Dental Restorations. Criteria for Placement and Replacement*, Quintessence Co Inc Chicago, 1989; b) R. C. Randall, N. H. Wilson, *J. Am. Dent. Assoc.* **1999**, *27*, 543-550.