



**UNIMORE**

UNIVERSITÀ DEGLI STUDI DI  
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## In Vivo Performance Of DMLS Co-Cr FPDs: 1 Year Follow-up.

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### Abstract

**Objective:** The aim of this study is to evaluate in vivo performance of cobalt-chromium/ceramic fixed partial dentures (FPDs) fabricated using CAD/CAM laser-sintering technology. The purpose is to assess technical and biological outcome compared to traditional cast metal-ceramic FPDs. **Method:** This retrospective study is conducted in a dental clinic that utilizes the Direct Metal Laser-Sintering (DMLS) CAD/CAM technique to fabricate metal-ceramic FPD since 4 years. The evaluation was taken during the periodical hygiene recall and follow-up. The FPDs were categorized in: 1) Single Dental Crown (1 dental unit) 2) Small Bridges (1-3 units) 3) Wide Bridges (>3 units). An Evaluation Form was completed, using USPHS criteria to estimate quality and conditions of FPDs: Framework fracture, Veneering Fracture, Occlusal Wear, Marginal Adaptation, Anatomical Form (Alfa (A) to Delta (D) scale). A soft tissue and abutment analysis were also conducted to assess: Plaque Index (PLI), Bleeding on Probing (BoP), Gingival Recession (REC). Moreover the satisfaction of every patient was measured with a Visual Analogue Scale (VAS) with 10 levels. **Result:** This study is actually in progress. 35 patients with a total of 145 fixed dental prosthetic units were examined until now. The mean observation period is  $14,7 \pm 10,6$  months (maximum: 44 months; minimum: 1 month). There were no framework fracture. 4 patients present 'veneering failures'. Three of these patients are affected by bruxism and parafunctional habits. 1 'wide bridge' (4 dental units) failed as a result of extraction after endodontic disease. The success rate is now 97,14%. The satisfaction rate is:  $9,1 \pm 1,12$ . **Conclusion:** Within the limitations of these preliminary results, DMLS FPDs are promising. Success rate is comparable to that found for cast metal-ceramic dental prostheses. Longer observation period and more dental units examination are required to validate these results.

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