

**Evaluation of Marginal Integrity of Laminate Veneers
constructed from Two Different Ceramic Materials
(In-Vitro Study)**

**دقة حواف القشرة الخزفية المصنوعة من مادتين مختلفتين من
السيراميك**

(دراسة معملية)

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بسم الله الرحمن
الرحيم

"وما أوتيتم من العلو الا
قليلا"

صدق الله العظيم

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Dedication

To my **dear Father** and **dear Mother** for their prayers, encouragement and support.

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Introduction

When a definitive aesthetic treatment is determined, it is crucial to grant the patient's wish with the necessary dental treatment. Thus, conservative treatments that are the solution to aesthetic problems involving morphologic modifications and provide the result that the patient expects should always be the first therapeutic option¹.

Introduction of laminate veneers in 1970s marked the beginning of modern cosmetic dentistry by combining the principles of aesthetics and tooth conservation.

Innovative computer aided design/ computer-aided manufacturing (CAD/CAM) technologies have introduced a wide collection of ceramic materials ranging from relatively weak feldspathic ceramic and leucite glass ceramic to high strength lithium disilicate glass ceramic and zirconium oxide. Their efficiency had been proven in both in vitro and in vivo studies.

Additionally, new ceramic materials have been developed, such as zirconia-reinforced lithium silicate (ZLS) ceramics. ZLS ceramics contain 10% by weight of dispersed zirconia particles embedded in a fine-grained glass matrix of 500 to 800 nm¹⁹.

Celtra attains the same bending strength as lithium disilicate in less time.

Marginal integrity is a significant criterion in long-term clinical success of restorations, Marginal accuracy is linked

to design and manufacturing considerations of ceramic veneers, marginal integrity is considered the “absolute vertical distance between a finish line of the prepared tooth and the margins of a fabricated veneer², Established dental literature supports clinically acceptable marginal integrity from 40 to 120 μm , with 120 μm considered the “maximum, tolerable marginal opening” for tooth preparations.⁵⁸ .

Unacceptable or inadequate marginal fits (typically wider than 120 μm) can shorten the longevity of a restoration due to greater cement film exposure⁶, resulting in several complications; including discoloration, luting agent dissolution, decay, micro leakage and plaque accumulation⁵⁸.

No data are sufficient for ZLS ceramic CAD/CAM (Celtra duo) restorations. Therefore, it is the purpose of this Research is to compare the vertical marginal gap distance of Lithium disilicate glass ceramics (e-max CAD) with zirconia reinforced lithium silicate glass-ceramic (Celtra DUE) laminate veneer.