Effect of digital scanning technologies and techniques on marginal and internal fit of monolithic zirconia crowns constructed on two angles of convergence.

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Dedication

This work is dedicated to

My Dear parents

Beloved wife, daughters Hania

& Nelly

And to my beloved brother and

sisters

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Introduction

Full coverage crowns are one of the most common fixed prosthodontic treatments, and for many years elastomeric impression materials have been used in their fabrication with success. Recent technological advancements have introduced alternatives to conventional impression methods through the use of Computer Aided Design-Computer Assisted Manufacturing (CAD-CAM) and intra-oral digital scanners. These new technologies may offer similar or better results compared to conventional methods. Some benefits of CAD-CAM production may include a more standardized method of prosthesis fabrication and the use of highly homogenous materials. Additionally, the workflow associated with prosthesis fabrication by digital impression methods may offer benefits such as decreased length and number of appointments, and decreased material cost.

For intra-oral and extraoral scanning devices to be considered an acceptable alternative to conventional impressions methods, it is important that they yield crowns with similar or better clinical success. Of factors that can predict clinical success are internal fit and retention, which should be as maximum as possible.

The everyday improvement in the digital dentistry and the outstanding technologies present make it obligatory that one should follow and understand the benefits and limitations of such technologies.