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**Comparative Evaluation of the Marginal Fit and Internal Fit of Metal Laser Sintered Crowns with Direct and Indirect Scanning Techniques:  
An Invitro Study**

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**INTRODUCTION:**

CAD/ CAM technology has evolved in dentistry and provide almost accurate restorations and prosthesis which is done by digitalized mechanical scanning. The scanners could be optical, laser, or contact scanners. The marginal and internal fits of restorations fabricated by CAD/CAM technology are better as compared with the restorations fabricated by the lost wax technique. Dental technology has also evolved with Computer Aided milling of Metal Laser Sintered Crowns.

For a century there is metal casting technology in arts and industries. It has its origin in the ancient Egypt or China, where the wax replicas were made, investing material surrounding the replica, it was let to harden, wax was melted and burn out was carried for production of accurate molds followed by melting of metal and pouring it in the mold. These ideas lead to the metal casting technology. In the literature, Dr. Swasey ( 1890) was the one who first introduced the technique of making solid gold inlay. Pressure casting method for the production of gold inlays was given by Dr. Philbrook (1896). After a decade, Dr. Taggart ( 1907) discussed his paper on casting technique and machine before New York Odontological Group. His improved casting technique was a success though it was not original. It was the incorporation of ideas of Martin's (1891) formation of pattern by using wax and Philbrook's ( 1896) casting of alloy by pressure technique. After this for a long period of time the casting technology has been used in producing accurate casts.<sup>1</sup>

Metal restorations which was fabricated by conventional lost wax technique has its own disadvantages. The fit of Crowns are affected by the dimensional properties of the casting metal and the investment material. The marginal fit and Internal fit of the restorations is an important criterion for the success and longevity of the prosthesis. Marginal and Internal fit is nothing but the accurate adaptation of the restoration or the crown on to the abutment teeth. Insufficient adaptation of the crowns results in cement solubility and plaque retention, which eventually causes secondary

caries in the abutment tooth and also inflammation of the periodontal structures. Marginal discrepancy is the distance or the gap from the internal surface of the restoration at the margin to the finish line of the abutment tooth. The acceptability of this discrepancy is dependent on the size and location of the tooth. Therefore, the fit of any restoration is as important as replacing the missing region in the mouth. To overcome these disadvantages various other techniques came into existence.<sup>2</sup>

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