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[\[PDF \(657K\)\]](#) [\[References\]](#)**Machining Accuracy of Crowns by CAD/CAM System Using TCP/IP:
Influence of Restorative Material and Scanning Condition**[Sachiko TOMITA](#)¹⁾, [Akiyoshi SHIN-YA](#)¹⁾, [Harunori GOMI](#)¹⁾, [Akikazu SHIN-YA](#)¹⁾²⁾
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Abstract:

The purpose of this study was to determine the optimal condition for fabricating accurate crowns efficiently using an internet-based CAD/CAM system. The influences of three different CAD/CAM restorative materials (titanium, porcelain, and composite resin) and three different step-over scanning distances (0.01 mm, 0.11 mm, and 0.21 mm) were evaluated, and their interactive effects were carefully examined.

Several points on the inner and outer surfaces of machined crowns—as well as height—were measured. These measurements were then compared with the original models, from which machining accuracy was obtained. At all measuring points, the inner surface of all crowns was machined larger than the die model, whereas the cervical area of porcelain crown was machined smaller than the crown model. Results of this study revealed that a step-over distance of 0.11 mm was an optimal scanning condition, taking into consideration the interactive effects of scanning time required, data volume, and machining accuracy.

Key words:[TCP/IP](#), [CAD/CAM](#), [Machining accuracy](#)

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