

**A COMPARISON OF ACTUAL SINGLE ROOTED  
TEETH LENGTHS TO ITS DIGITAL IMAGE IN  
ENDODONTIC THERAPY**

A Thesis

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# **Abstract**

This study compared between the actual & digital radiographic tooth length to evaluate the accuracy of digital radiographic measurement system in estimation of tooth length in endodontic therapy.

The study was performed on eighty sound, single, straight, rooted, teeth. All teeth length were measured from the incisal edge or tip of the cusp to the tip of the root apex by a vernier. The real root canal length was measured by endodontic file .

Each tooth was adjusted separately, radiographed with direct digital radiography & the digital image was viewed on the monitor screen. Measurement of tooth length was obtained with on screen two click digital radiographic measurement system, one click at the incisal edge & the second click at the tip of the root apex, (as indirect method of measurement).

The mean values for the actual, the digital radiography & the root canal length were obtained in millimeter. The mean digital radiographic length was longer than the actual tooth length by 0.02mm & the mean root canal length was longer than the actual by 0.04mm.

Results from t- test for significance of difference between the means shows that there is no significant difference between the actual & the digital radiographic tooth length, no significant difference between root canal & the digital radiographic tooth length.

Under the experimental condition of this study it can be concluded that the image quality of digital system offers the possibility of quantifying the distance between two points & this is a great advantage for the use in endodontics.