# تعیین ضرایب تصحیح تصاویر در تکنیک پانورامیک با استفاده از فانتوم فک پایین

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**Title:** Correction factors determination for panoramic radiography using a phantom of mandible.

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**Background and Aim:** Image distortion is one of the major problems in panoramic radiography. Horizontal and vertical correction factors could be determined for more efficient clinical applications. The purpose of this study was to determine horizontal and vertical correction factors in panoramic radiography.

**Materials and Methods:** In this test evaluation study in which an asymetric mandibular phantom was constructed by plexiglass and aluminium as soft and hard tissue equivalents. The right half was slightly shorter than the left half. Steel markers were installed to make vertical and horizontal measurments possible.The length of the markers as well as the intermarker distances were measured by Mitutoyo digital micrometer which was accurate within ±0.05mm. The phantom was then positioned in PM 2002 cc proline (Planmeca, Finland) panoramic machine and panoramic images were obtained. 8 times for each half of the phan. The same length and inter marker distances were measured on digitized panoramic images by Cygnus software, which was accurate whitin ±0.01 mm. Magnification and correction factors were determined for the vertical and horizontal dimensions in each region of pantomograms.

**Results:** The mean vertical correction factor was 0.77±0.02 (range: 0.75-0.80) in the right and 0.77±0.05 (range: 0.75-0.85) in the left half jaw. The mean horizontal correction factor was calculated as 0.98±0.15 (range: 0.76-1.18) in the right and 1.02±0.14 (range: 0.90-1.25) in the left half jaw.

**Conclusion:** Dissimilarity of vertical and horizontal correction factors among left and right half jaws and also in different regions of a half jaw is relatively considerable. However, a constant correction factor, specialy in horizontal aspect, could not be applicable. Comparing with horizontal correction factors the vertical correction factors showed less variations between different regions as well as different samples.

**Key Words:** Radiography; Panoramic; Magnification; Correction factor; Distortion

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