

# Assessment of bone loss in periodontitis from panoramic radiographs

## Abstract:

Bone loss in chronic periodontitis was assessed from panoramic radiographs by direct measurement from the cemento-enamel junction (CEJ) and by measuring the proportion of the tooth length supported by bone. Mesial and distal bone levels of all available teeth were assessed for 50 patients aged 30-39 years referred for periodontal treatment. 85% and 74% of surfaces were measurable by the proportional and direct techniques, respectively. 27% of surfaces had no bone loss according to the proportional score, whereas 22% had a CEJ to alveolar bone distance of less than 2 mm. In addition, over half the surfaces with a proportional bone loss score of zero had a CEJ to alveolar bone distance of 2 mm or more, and for each proportional bone loss score, there was considerable overlap in the CEJ to alveolar bone distances recorded. The validity of the CEJ to alveolar bone measurements was established by comparison with direct measurements at periodontal surgery. The results support the use of direct measurement from the CEJ to alveolar bone rather than the assessment of the proportion of the tooth length within the bone when investigating bone loss from panoramic radiographs. This population of 30-40-year-old periodontal patients had a mean of 50% of sites with a CEJ to alveolar bone distance of 3 mm or more, and at such sites, there was a mean additional bone loss of 2.1 mm.