RADIOGRAPHIC MARKING BALLS

The vertical height of the bone is best determined radiographically. Accurate measurement of the vertical dimension on the radiograph facilitates the selection of the appropriate implant length. This helps avoid implant placement into the maxillary sinus, the floor of the nose or the mandibular canal and prevents perforation of the inferior aspect of the mandible. Measurements can be made directly on panographic film using a millimeter ruler. Corrections should be made for the degree of enlargement produced by the particular radiographic equipment.

Radiographic marking balls of a known dimension can be embedded in a plastic template prior to radiographic examination. Once the radiograph is taken and the metal marking balls are visible on the image, measurements can be taken to determine the amount of bone available for implant placement.

To calculate the distortion factor, a simple formula can be utilized:

(5 ÷ A) x B = amount of actual bone available.

Formula Key:
Radiographic marking ball = 5mm in diameter
A = Size of marking ball image on radiograph
B = Length in millimeters on the radiograph of available bone between the crest of the ridge and the inferior alveolar nerve canal

Example:

A = 6.5mm
B = 14mm
Therefore: (5 ÷ 6.5) x 14 = 10.76mm actual bone available

NOTE:
A 2mm margin of safety, from the apical end of the implant to the adjacent vital structure, should be considered.