

Quantitative computed tomography (QCT) is a useful technique for *in vivo* determination of bone density. QCT methods use either single or dual energy CT scans. Dual energy QCT (DEQCT) was implemented on the GE Hi Speed Advantage CT scanner located at Froedtert Memorial Lutheran Hospital for the measurement of bone density in animals. In DEQCT, CT scans are performed at 80 and 120 kVp. Bone density is then computed from the digital scan data using an energy weighted subtraction algorithm. The DEQCT technique was calibrated using a series of dipotassium hydrogen phosphate solution standards in concentrations varying from 0 to 860 mg/cc. DEQCT was used to measure the bone density in the osteotomy site of dogs undergoing acute or chronic mandibular distraction. Significant differences between groups were seen using this technique. The QCT technique provides a useful tool for quantitative analysis.