Rheumatoid arthritis (RA) is a chronic and potentially disabling disease. The disease primarily affects the joints, where structural damage can occur already at an early stage. In RA imaging is essential in the evaluation of structural damage. A novel imaging technique is high-resolution peripheral quantitative computed tomography (HR-pQCT) which allows detailed evaluation of cortical and trabecular structures, such as cortical interruptions. In this thesis we studied the aspects of truth (validity), discrimination (reliability), and feasibility of HR-pQCT with respect to the detection of cortical interruptions in finger joints.