

RELIABILITY OF HIP INTERNAL ROTATION RANGE OF MOTION MEASUREMENT USING A DIGITAL INCLINOMETER

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Compliance Statement

Prior to participation, all subjects were allowed time to review consent materials and have any questions answered. Participants provided written consent. The Institutional review board at Mayo Clinic approved this study

Introduction: Limited hip internal rotation (IR) is a criterion used in the classification of a patient as having osteoarthritis (OA). An understanding of the etiology of hip OA and the relationship to early restricted motion continues to evolve. What was previously classified as primary OA is now hypothesized to actually be arthritis secondary to subtle developmental abnormalities of the joint architecture. Thus, limited hip IR is not only a clinical finding for individuals with established OA, it may be useful in screening those with hip abnormalities who may be at risk for future OA.

Purpose: The purpose of this study is to report the intertester and intratester reliability of active and passive hip IR measurement using a digital inclinometer with visual monitoring of the pelvis.

Methods: Twenty-five subjects (8 men, 17 women) between the ages of 22 and 42 participated. Two examiners measured hip internal rotation for each subject using a digital inclinometer. Measurements performed included passive internal rotation, active internal rotation, and active internal rotation while internally rotation both legs simultaneously.

Results: ICC's for all measurements ranged from .84 to .93. Based on minimal detectable change values, active internal rotation of a single leg with visual monitoring of the trunk and pelvis, which had a MDC of 5.4, was the most responsive of the techniques examined.

Discussion: Our results demonstrate that a simple technique using a digital inclinometer with visual monitoring of the pelvis can produce very reliable measurements within and between examiners. A clinical advantage of techniques used in this study is the ease in which measurements may be reliably obtained without the use of belts for stabilization of the pelvis or more sophisticated equipment which can add complexity to the acquisition of measurements.