

Gender differences in passive hip range of motion in asymptomatic adults

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Purpose

To assess gender differences in passive hip range of motion in asymptomatic adults.

Relevance

Differences in passive hip range of motion may indicate differing injury risk patterns between women and men.

Methods

Passive hip range of motion was assessed in asymptomatic adult volunteers. Volunteers completed the Modified Harris Hip score (MHHS) and UCLA questionnaires to demonstrate that the subjects were active and asymptomatic. All examiners underwent a training session prior to the initiation of the study. Examiners were blinded to the measurements taken with a goniometer and the hip measured was randomly selected. Each measurement was completed three times and the mean value was used for analysis. Measurements in supine included hip flexion, abduction, adduction, internal rotation with the hip flexed to 90 degrees, and external rotation with the hip flexed to 90 degrees. Measurements in prone included internal rotation with the knee flexed to 90 degrees, external rotation with the knee flexed to 90 degrees, and hip extension. In a previous study, the examiners demonstrated excellent intra-rater reliability in all measures and good- excellent inter-rater reliability hip flexion, hip internal rotation in both supine and prone. Comparisons between men and women volunteers were assessed with a chi-square test.

Results

25 women and 25 men (50 hips) with mean age of 32 years (range 18-51) and BMI of 23.6 for women and 27.6 for men were examined. The MHHS mean score for both genders was greater than 99 (scale of 1-100 with 100 being no impairment) and the UCLA mean scores were 8.6 for women and 8.4 for men (scale range of 1-10 with 10 representing regular participation in impact activities, such as running) confirming the group was asymptomatic and active. Differences between genders reached significance($p < 0.0001$) for internal rotation in supine (women 31.1 degrees , men 18.4 degrees) and prone internal rotation (women 37.1 degrees, men 23.5 degrees). Supine hip flexion differences (women 112, men 103) was also significant ($p=0.04$). The remaining hip ROM measurements were not significantly different between genders.

Conclusions

Passive hip range of motion differences between women and men exist. Women had significantly greater hip flexion and internal rotation than men.

Implications: Men and women have different passive hip ROM measurements, and as a result, require different degrees of force closure across the joint to maintain stability. Further, injury patterns and dysfunctions involving the hip and its affects on the pelvic girdle can be different in men and women.

Key words

Hip, range of motion, injury, gender