

## AN EXAMINATION OF ISOMETRIC HIP MUSCLE STRENGTH IN WOMEN WITH AND WITHOUT STRESS URINARY INCONTINENCE: A CASE-CONTROL STUDY

### Abstract

**Objective:** The purpose of this study was to examine whether hip muscle strength differed between women with and without stress urinary incontinence (SUI).

**Study Design:** Case-control comparison study.

**Background:** SUI may be associated with musculoskeletal dysfunction, including impaired strength of hip muscle groups, particularly the deep hip external rotators.

**Methods and Measures:** Subjects included 48 females, 23 with SUI and 25 control subjects. Isometric hip strength was tested with a handheld dynamometer. Pelvic floor muscle performance was examined manually through graded strength of contraction, duration over which participants could maintain a contraction, and repetitions over which participants could quickly contract the pelvic floor muscles.

**Results:** Isometric hip strength among women with SUI was lower in the abductors and external rotators than control subjects ( $p < 0.05$ ). None of the hip strength values, however, were correlated with the magnitude of symptoms associated with SUI. Among the pelvic floor muscle performance tests, the number of repeated contractions performed in 10 seconds was lower among women with SUI than control subjects ( $p < 0.05$ ); this was the only variable that correlated with the magnitude of symptoms associated with SUI.

**Conclusions:** While isometric hip abduction and external rotation strength differed between women with and without SUI, hip strength did not correlate significantly with the magnitude of symptoms associated with SUI. Results may not support interventions intended to strengthen prime movers of the hip as part of a pelvic floor muscle training program for SUI. Results indicate that the ability to perform repeated fast contractions of the pelvic floor muscles is associated with symptoms related to SUI.

**Key Words:** Hip; Muscle strength; Pelvic floor; Urinary incontinence, stress

### References

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<b>Is this a clinical trial?</b>	<b>No</b>
<b>What were the subjects in the study?</b>	<b>HUMAN</b>
<b>Was this study approved by an ethics committee?</b>	<b>Yes</b>
<b>Specify Name of Ethics Committee</b>	<b>IRB at Mayo Clinic</b>
<b>Was the Declaration of Helsinki followed?</b>	<b>Yes</b>
<b>Was informed consent obtained from the patients?</b>	<b>Yes</b>