

The Impact of Different Body Positions on Pelvic Floor Muscle Function in Women with and Without Stress Urinary Incontinence

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Abstract:

Background: Pelvic floor muscle (PFM) assessment is commonly performed in the supine position; however, body position may influence the ability to contract the PFM.

Aim: To examine PFM function across different body positions in women with and without stress urinary incontinence (SUI).

Methods: Forty-two women participated, including 17 with SUI and 25 without SUI. PFM function, including maximal contraction and endurance, was assessed using abdominal ultrasound in four positions: supine, sitting, standing, and squatting. Participants also reported perceived difficulty in each position.

Results: Across both groups, maximal PFM function was achieved in the standing position, whereas the lowest was observed in the supine position. Overall, women with SUI demonstrated reduced PFM function compared to controls. Significant between-group differences were identified in the sitting and standing positions, with lower displacement values in the SUI group. Specifically, during sitting, mean contraction displacement in the SUI group was $2.68(\pm 1.67)$ mm compared with $4.51(\pm 2.62)$ mm in the control group. In standing, displacement values were $6.92(\pm 3.50)$ mm and $9.18(\pm 5.05)$ mm for the SUI and control groups, respectively ($p < 0.05$). Furthermore, more than half of the women with SUI (52.9%) reported sitting as the most challenging position, compared with 12% of the control group.

Conclusions: PFM function in women with SUI is reduced in upright positions compared with women without SUI, while no differences are observed in the supine position. PFM performance varies according to body position, highlighting the importance of incorporating standing assessment into standard pelvic floor muscle examination protocols.

Keywords:

Incontinence, leakage, urine, pelvic diaphragm, ultrasound.