



Pelvic floor muscle activity may differ across urinary incontinence subtypes, particularly at rest.

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Differences in pelvic floor muscle activity across urinary incontinence subtypes: a surface electromyography study

Aim

The aim of this study was to compare pelvic floor muscle (PFM) activity among women with stress urinary incontinence (SUI), urgency urinary incontinence (UII), and mixed urinary incontinence (MUI) using surface electromyography (sEMG).

Methods

- This observational cross-sectional study included women aged 25-75 years with SUI, UII, or MUI.
- PFM activity was assessed using sEMG in the supine position, with perianal electrodes and a reference electrode on the inner thigh.
- Participants performed five 5-second PFM contractions alternating with six 5-second rest periods (55 seconds total). They were instructed to isolate the PFM contractions and avoid accessory muscle activation.

Results

26 women; SUI: 7, UII: 7, MUI: 12; Median age: 47 years

Overall group differences were significant for mean resting activity (μV), mean resting activity (%MVC), and onset time.

Median values for both resting activity measures were higher in UII and MUI than in SUI, while median onset time was shorter. However, no pairwise comparison remained statistically significant after Bonferroni correction.

No significant between-group differences were detected in the remaining sEMG parameters.

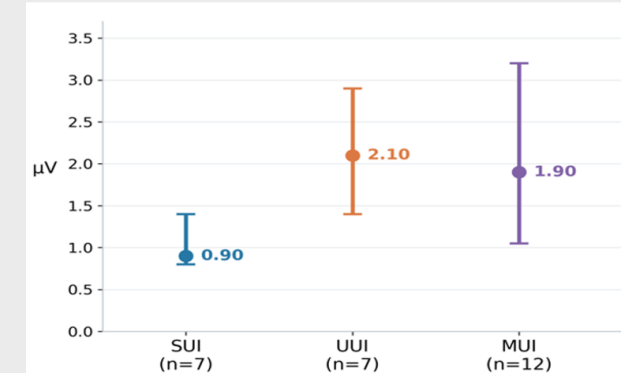
**Preliminary findings from 26 participants in an ongoing study.*

Conclusion

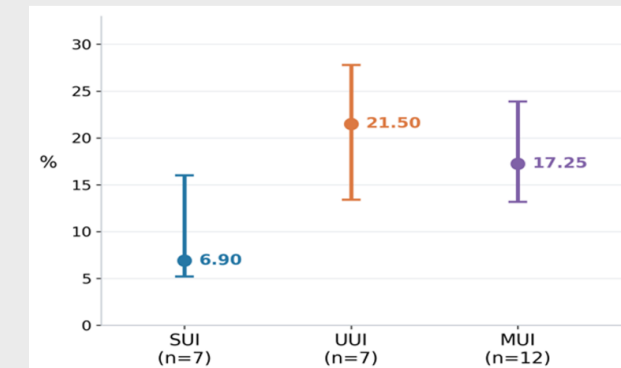
These findings suggest that differences in PFM activity across urinary incontinence subtypes may involve both resting activity and activation timing.

They highlight the importance of considering muscle activity patterns alongside strength in clinical assessment and individualized rehabilitation.

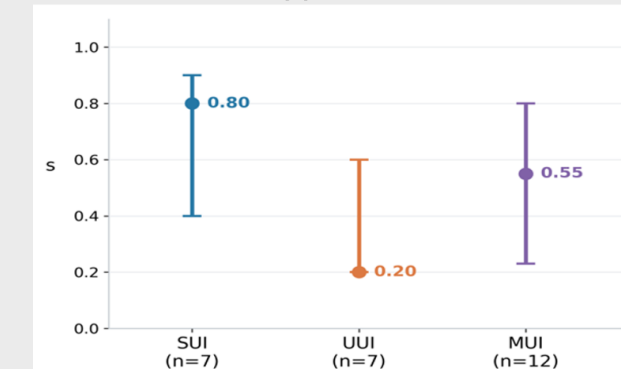
A. Mean resting activity (μV), $p = 0.047$



B. Mean resting activity (%MVC), $p = 0.043$



C. Mean onset time (s), $p = 0.044$



Points represent medians; bars indicate Q1–Q3. P-values are from Kruskal–Wallis tests. MVC: maximal voluntary contraction. Onset time: time to reach 75% of mean work-phase activity.