

Elastography-derived strain metric analysis may represent a reliable research tool that helps overcome the limitations of current assessment methods.

WHY THIS STUDY?

Objective quantification of pelvic floor stiffness remains challenging. Novel elastography-derived strain metrics may offer a promising approach to assess mechanical properties in specific pelvic floor structures.

AIM:

To provide the first investigation of intra-rater and inter-rater reliability of elastography-derived strain metrics in different pelvic floor structures in asymptomatic women.

STUDY AT A GLANCE:



31 asymptomatic women (26 ± 5.4 years)



4 pelvic floor structures
• Perineal body • Transverse perineal • Puborectalis • Obturator internus



2 raters



2 strain metrics
• Cumulated major strain (CMajor) • Cumulated minor strain (CMinor)

ASSESSMENT PROTOCOL:

- 2D radiofrequency ultrasound imaging (Terason uSmart 3200T NexGen, Burlington, VT, USA)
- Linear array transducer (15L4A, 4.0-15.0 MHz)
- Passive displacement of tissues (using Foley catheter intravaginally or passive hip rotation)
- Postprocessing with a customized MATLAB script

RELIABILITY RESULTS:

Structure	Intra-rater ICC	Inter-rater ICC
Perineal body	0.81-0.88	0.59-0.66
Oburator Internus	0.89-0.90	0.80-0.81
Puborectalis	0.88-0.90	0.51
Transverse perineal	0.61-0.75	0.56-0.62

ICC interpretation: <0.20 slight; 0.21–0.40 fair; 0.41–0.60 moderate; 0.61–0.80 substantial; 0.81–1 almost perfect | ICC (3.1) intra-; (2.1) inter-rater

Assessment of elastography-derived strain metrics in different pelvic floor structures: an intra- and inter-rater reliability study

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