

Paper Category:	Diagnosis and Aetiology
Paper Title: (Arial Font; 14 Pt Size)	Sex-specific Characteristics of Muscle Stiffness Measured by Ultrasound Shear-Wave Elastography
Abstract Body: (Arial Font; 12Pt Size)	<ul style="list-style-type: none"> • Background • Objectives • Method • Results • Discussions and Conclusions
<p>(Maximum word limit - 300 words)</p> <p>Background: Muscle quality is an important factor in diagnosing sarcopenia. Recently, there has been a growing interest in using ultrasound shear-wave elastography (SWE) to assess muscle stiffness as a muscle quality parameter. However, despite this rising interest, the specific relationship between SWE muscle stiffness in transverse and longitudinal views and muscle parameters in different sexes remains unclear.</p> <p>Objectives: This study aimed to explore the sex-specific relationship between SWE muscle stiffness, assessed using transverse and longitudinal views, and various muscle parameters.</p> <p>Method: The study included sixty-nine healthy adults aged 19–59 years (46.4%, women). Muscle stiffness was assessed using SWE in both transverse and longitudinal views for the rectus femoris (RF) and biceps femoris (BF) of the dominant legs. Ultrasound parameters, including muscle thickness, pennation angle, and echo intensity, were measured. Muscle properties, such as tone and stiffness, were evaluated using Myoton Pro. Muscle function was assessed through measurements of jump height and leg strength.</p> <p>Results: The transverse view of RF SWE muscle stiffness exhibited a significant association with muscle thickness in both sexes (Spearman's correlation coefficient [r_s: men, 0.440; women, 0.649, $P < 0.05$]), while the pennation angle showed a significant association in only women (r_s: 0.525, $P = 0.002$). Furthermore, the transverse view of RF SWE muscle stiffness was correlated with counter movement jump (r_s: 0.587, $P < 0.001$), squat jump (r_s: 0.633, $P < 0.001$), and knee extension (r_s: 0.447, $P = 0.012$) in only women. No significant associations were observed between the SWE muscle stiffness of the BF and the muscle parameters in both sexes.</p> <p>Discussions and Conclusion: Our study revealed sex-specific associations between SWE muscle stiffness and muscle parameters, particularly in the RF of the transverse view in women. These findings suggest that SWE muscle stiffness in the transverse view of the RF may serve as a potential indicator of muscle quality.</p>	