

Audaxis Medical Announces Positive Results Published in Biomaterials Comparing Implants for Stress Urinary Incontinence

Study demonstrates superior biocompatibility and mechanical performance of the Plielle™ urethral support system.

FT. WAYNE, IN, UNITED STATES, January 9, 2026 /EINPresswire.com/ -- Audaxis Medical, a



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women's health company pioneering next-generation, tissue-inspired solutions for [stress urinary incontinence](#) (SUI), today announced peer-reviewed results from its preclinical study to be published in the May 2026 issue of [Biomaterials](#), one of the world's leading journals in materials science and biomedical engineering.

SUI is a chronic and often debilitating condition in which every day physical activities—such as coughing, laughing, or exercise—cause involuntary urine leakage due to weakened pelvic support. One in three women globally (and more than 30 million women in the U.S. and Europe) experience SUI, and many remain untreated due to concerns surrounding traditional mesh implants. By

emulating natural pelvic support tissue and demonstrating a favorable biocompatibility profile, [Plielle](#) is designed to restore confidence in surgical intervention and expand access to definitive treatment options.

The published study evaluated the Plielle™ urethral support system—Audaxis Medical's proprietary polyurethane scaffold engineered to mirror the compliance, resilience, and remodeling behavior of natural pelvic support tissue. Using a validated SUI model, the research demonstrated superior tissue integration, a reduced pro-inflammatory response, and preservation of mechanical properties following implantation. Material and bench testing further confirmed structural stability under dynamic physiological loads, with no evidence of oxidative degradation, distinguishing Plielle from the well-documented deterioration patterns associated with polypropylene mesh.

"This study represents a major step toward delivering a next-generation implant that reflects

how the body's own fascial tissues behave," said Professor Chris Chapple, MD, co-inventor and internationally recognized leader in functional urology. "For decades we have relied on materials that did not match the biology. This research suggests Plielle moves us closer to a construct that genuinely aligns with native support tissue function."

"The polyurethane scaffold shows a level of tissue integration and biological compatibility we simply do not see with polypropylene," added Professor Sheila MacNeil, PhD, co-inventor and leading expert in biomaterials and tissue engineering. "These data highlight the importance of designing implants that remodel harmoniously with the host environment rather than provoke chronic inflammatory responses."

About Audaxis Medical

Audaxis Medical is a women's health company pioneering next-generation, biomaterial solutions for pelvic floor disorders. Its flagship platform, the Plielle™ urethral support system, is built on a proprietary polyurethane scaffold engineered to mimic the mechanical and biological behavior of natural pelvic tissue. Audaxis is committed to improving safety, durability, and patient outcomes for the millions of women affected by stress urinary incontinence.

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