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### Imaging the dynamics of pelvic floor function

The Pelvic Floor (PF) serves a multitude of functions, including urinary and fecal continence, by responding to voluntary and reflex behavior. Particularly in the female, objective evaluation of these functions continues to be a diagnostic challenge and new methods other than a digital pelvic examination are needed. We present here the use of a Vaginal probe to measure PF strength as well an ultrasound method to visualize pelvic floor dynamics. The vaginal probe was used to evaluate the force and displacement produced during its voluntary and reflex (PF) and generate a vaginal pressure profile. The defining biomechanical parameters of PF closure forces and timing, as derived from the use of the probe and trans-perineal ultrasound imaging were obtained from asymptomatic volunteers as well as patients presenting with relevant pathology. The response of the pubococcygeus, puborectalis, and iliococcygeus muscles was identified and their dynamics visualized using ultrasound imaging and correlated with the biomechanics obtained by the vaginal probe. The displacement of the urethra and bladder neck relative to the anorectal junction will be demonstrated using video strips from the start to the finishing point of a cough, as well as PF muscle contraction and Valsalva maneuvers especially in response to sudden rises in intra-abdominal pressure.

### Biography

Chris Constantinou investigated the function and structure of the urinary tract in Urology at Stanford University for over 40 years. His basic interests has always been in clinical and basic investigations of urinary continence and the impact of surgical and pharmacological procedures in their treatment. His current specific interest is based on the application of new technological in evaluating urethral, bladder and pelvic floor function. He maintains a close collaboration with departments of gynecology, biomedical engineering and experimental surgery. He is on the editorial board of many journals and the Editor in Chief of the Open *Journal of Obstetrics and Gynecology*.

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