

Authors: J. Bidmead, J. Mantle, L. Cardozo A Hextall.
Institution: Department of Urogynaecology, Kings College Hospital
Title: How Does Pelvic Floor Physiotherapy Affect Urethral Sphincter Function.

Aims of the study:

Pelvic floor physiotherapy remains the cornerstone of conservative therapy for stress incontinence in women. Little is known, however, about its mechanism of action. A better understanding of the effects of pelvic floor exercise may lead to improved techniques of pelvic floor rehabilitation.

It has been proposed that pelvic floor exercises act indirectly by increasing the resting tone of the urethral sphincter. This study examined the effect of pelvic floor exercise on the urethral sphincter by measuring resting urethral pressure profiles.

Methods:

Women diagnosed as having genuine stress incontinence using videocystourethrography were recruited to a prospective study of pelvic floor exercise. Baseline measurements of urethral pressure were made using a Gaeletec microtransducer tipped catheter with the bladder filled to 250 ml according to ICS guidelines. Women were semi-reclining during the measurement, a mechanical pulling device was used to withdraw the catheter at a fixed rate. A standardised pad test was then performed. Women then undertook a 14-week course of closely supervised pelvic floor exercises under the guidance of an experienced pelvic floor physiotherapist before baseline investigations were repeated. SPSSv10 was used for statistical analysis.

Results:

61 women were recruited to the study; paired results were available from 56. Mean changes in pad test results, and mean changes in maximal urethral closure pressure, (MUCP), and functional urethral length, (FUL), are shown in the table. For clarity only mean values are shown.

Change in pad test(g) Mean (SD)	Initial MUCP(cm H₂O) Mean (SD)	Post Rx MUCP(cm H₂O) Mean (SD)	Change in MUCP(cm H₂O) Mean (SD)	Initial FUL (mm) Mean (SD)	Post Rx FUL(mm) Mean (SD)	Change in FUL(mm) mean (SD)
-6 (15.7)	43.7(17.1)	42.2(16.9)	- 0.46 (7.2)	31.8 (6.2)	32.1 (6.4)	+0.16 (3.7)

Conclusions:

The changes measured are small and well within the inherent variability of the test itself. There were no significant alterations in resting urethral pressure profiles or functional urethral length after treatment. This was regardless of whether the pad test results indicated successful treatment or not. In the light of this, it seems unlikely that pelvic floor exercises act by producing any change in the resting tone of the urethral

sphincter. Further studies are underway to elucidate their mode of action.