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Title (type in CAPITAL LETTERS, leave one blank line before the text) EMG-CONTROLLED BIOFEEDBACK – IS IT WORTH IT?
<u>Aims of study</u> The aim of the study was to evaluate the long-term efficacy of pelvic floor reeducation with EMG-controlled home biofeedback in the treatment of female stress or mixed incontinence.
<u>Methods</u> Between 1995 and 1998 78 women completed a pelvic floor muscle training program with an EMG-controlled biofeedback device for 3-6 months. A mean 26 months afterwards subjects were invited to come back for follow-up. A thorough urogynecological examination was performed before treatment and repeated at the follow-up appointment. Women answered a standardized questionnaire on symptoms of stress and urge incontinence including the frequency and severity of symptoms. A gynecological examination was performed to check for signs of genital atrophy and genital prolapse. A cough stress test and a pad test with a standardized bladder filling of 300 cc were performed. Women completed a voiding diary for seven days. Multichannel urodynamic testing including retrograde cystometry with a filling speed of 50ml/min and urethral pressure profilometry with an 8-Fr-microtip catheter both at rest and during stress (Dantec Duet DU 5500 MK2, Skorlunde, Denmark) was performed only before the treatment started but not at the follow-up appointment. The patient was diagnosed as cured when she did not report any incontinence and when no urine loss was demonstrated in the stress and in the pad test. The definition of improvement included a self reported cure plus demonstrable stress incontinence or a self reported improvement plus no demonstrable stress incontinence.
<u>Results:</u> Out of the 78 women who were invited 14 had moved from the area and could not be contacted. Twenty-eight declined to come back for follow-up. One woman was pregnant. This left 36 (57%) women. All subjects gave informed consent before participation. The number of incontinence and urgency episodes, number of pads per day, voiding frequency during day and night and leakage in a cough stress test decreased significantly immediately after the training with biofeedback and increased again for long-term follow up.

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Levator ani muscle strength improved significantly after the treatment and remained significantly better for long-term follow-up. Immediately after the training, 25 (69.5%) women were cured or improved. At the long-term follow-up, seventeen women (47.2%) had a persistent success of training. 76.5% of these still performed pelvic muscle exercises on a regular basis.

Treatment outcome after EMG-controlled biofeedback (n = 36)

	immediately after training	long-term follow-up	
cured	1 (2.8%)	1 (2.8%)	76.5% (n=13) still performing PFR (without biofeedback)
improved	24 (66.7%)	16 (44.4%)	
unchanged	11 (30.6%)	19 (52.8%)	21.1% (n=4) still performing PFR

PFR - pelvic floor reeducation

Conclusion.

In conclusion only about half of the patients who perform a pelvic floor reeducation program with biofeedback are still improved or cured after a mean follow-up time of 26 months. However, as these patients are happy and do not want surgery a conservative approach is still justified regarding the side effects and the costs of surgery. Women should be counselled on the long-term efficacy and on the necessity to maintain a lifelong training if success should sustain over time