

Functional Electrical Stimulation – hemiplegic shoulder

Author, Year PEDro Score, Country	Sample size	Intervention	Outcome and significance: (+) significant (-) not significant
Chantraine et al., 1999 PEDro score: 4	4	FES delivered to the affected shoulder in combination with conventional Bobath therapy vs. conventional Bobath therapy only. Sessions were administered for 5 weeks (130 mins each session)	At 6,12, and 24 months: (+) Range of motion (Function) (+) Pain assessment (also significant at 3 months) (+) Reduced subluxation measured by X-ray
Church et al., 2006 PEDro score: 9	9	FES in addition to standard stroke unit care vs. Control group in addition to standard stroke unit care for 4 weeks Both groups received stimulation or sham stimulation via surface electrodes on the shoulder for 4 weeks (3x daily for 1 hour).	At 4 weeks: (-) ARAT-Grasp and Gross (-) ARAT-Grip and Pinch (-) Frenchay Arm Test (-) Motricity Index-Arm (-) Star Cancellation Test (-) Upper limb pain assessed by visual analogue scale (-) Disability At 3 months: (+) *ARAT-Grasp and Gross (-) ARAT-Grip and Pinch (+) *Frenchay Arm Test (+) *Motricity Index-Arm (-) Star Cancellation Test (-) Upper limb pain assessed by visual analogue scale (-) Disability (-) Global health status (Nottingham E-ADL Index, Nottingham Health Profile)

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			* In favour of Control group; i.e. control group had better improvements than the FES group
Faghri and Rodgers, 1997 PEDro score: 4	4	FES and conventional physical therapy vs. conventional physical therapy only. FES was given for 1.5 to 6 hours per day for 6 weeks. Both groups received standard physical therapy.	<p>During Treatment (1-6 weeks): (+) EMG activity (at weeks 5 and 6 only) (+) Muscle tone (at weeks 2-4 and 6 only) (+) Reduction in pain (at week 6 only) (+) Modified Bobath Assessment Chart (Function, at weeks 4-6 only)</p> <p>Follow-up (12 weeks post-treatment): (+) EMG activity (+) Muscle tone (Modified Ashworth Clinical Scale) (+) Reduction in pain (+) Modified Bobath Assessment Chart (Function)</p>
Faghri et al., 1994 PEDro score: 4	4	FES and conventional physical therapy vs. conventional physical therapy only. FES was given for 1.5 to 6 hours per day for 6 weeks. Both groups received standard physical therapy.	<p>At post-treatment (6 weeks): (+) EMG activity (+) Muscle tone (Modified Gross Clinical Scales) (+) Reduction in pain (+) Arm function/active range of motion measured by the modified Bobath Assessment Chart (+) Reduced subluxation measured by X-ray (-) Upper arm girth</p> <p>At Follow-up (6 weeks post-treatment):</p>

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			(-) EMG activity (-) Muscle tone (Modified Gross Clinical Scales) (+) Reduction in pain (-) Arm function/active range of motion measured by the modified Bobath Assessment Chart (-) Reduced subluxation measured by X-ray (-) Upper arm girth
Linn et al., 1999 PEDro score: 7	7	FES and conventional therapy vs. conventional therapy only. Sessions were given 4 times a day for 4 weeks, with individual sessions increasing from 30min in week 1 to 60min in week 4.	At 4 weeks (post-treatment): (-) Reduction in pain (+) Decreased shoulder subluxation measured by X-Ray (-) Pain free range of passive lateral rotation assessment (-) Motor Assessment Scale (-) Upper arm girth At 8 weeks (follow-up): (-) Reduction in pain (-) Decreased shoulder subluxation measured by X-Ray (-) Pain free range of passive lateral rotation assessment (-) Motor Assessment Scale (-) Upper arm girth At 3 months (follow-up):

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			(-) Reduction in pain (-) Decreased shoulder subluxation measured by X-Ray (-) Pain free range of passive lateral rotation assessment (-) Motor Assessment Scale (-) Upper arm girth
Wang et al., 2000 PEDro score: 5	5	FES vs. control group. Effect of FES on acute and chronic subluxation was also examined. Sessions were 6 hr/day for 6 weeks	At post FES treatment 1 (6 weeks) and after an additional 6 weeks of FES: (+) reduction in shoulder subluxation measured by x-ray in the short duration group (acute) (-) reduction in shoulder subluxation measured by x-ray in the long duration group (chronic)