Urinary Incontinence

Author, Year PEDro Score, Country	Sample size	Intervention	Outcome and significance: (+) significant (-) not significant
Guo et al., 2014 PEDro score : 4	61 patients with acute/subacute stroke	Transcutaneous electrical nerve stimulation (TENS) at 75 Hz (n=32) vs. No TENS (n=29) *Treatment details*: TENS was provided with a pulse duration of 70 µS and at 75 Hz in the form of unidirectional square wave, maximum therapeutic current of 16 mA; electrodes were placed on the second lumbar spinous process, inside of the middle and lower third of the junction between the posterior superior iliac spine and the ischia node. Provided for 30-minute sessions/day for 60 days.	**At 60 days (immediately post-treatment):** (+) Overactive Bladder Symptoms Score (OABSS) – daily micturition (+) OABSS – nocturia (+) OABSS – urgent urination (+) OABSS – urge urinary incontinence (+) Barthel Index (BI) – bowels (+) BI – bladder (-) BI – grooming (+) BI – toilet use (-) BI – feeding (+) BI – transfers (+) BI – mobility (-) BI – dressing (+) BI – stairs (+) BI – bathing (+) Urodynamic parameters – maximum cystometric capacity, detrusor pressure, maximum flow rate.
Liu et al., 2016 PEDro score: 9	81 patients with subacute/chronic stroke	Transcutaneous electrical nerve stimulation (TENS) at 20 Hz (n=27) vs. TENS at 75 Hz (n=27) vs. No therapy (n=27) *Treatment details*: TENS currents were biphasic square waves with pulse durations of 150 µS and pulse frequencies of 20 or 75 Hz. Electrodes were placed on the region of the second sacral	**At 90 days (immediately post-treatment):** *20Hz vs. 75 Hz* (+) Overactive Bladder Symptom Scores (+) Barthel Index (+) Urodynamic parameter – max. cystometric capacity (+) Urodynamic parameter – detrusor pressure, (+) Urodynamic parameter – max. flow rate (+) Voiding diary parameter – 24-hour

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		level on the opposite sides of the vertebral column and inside of the middle and lower third of the junction between the posterior iliac spine and the ischial node. Provided for 30-minutes/session for 90 days.	frequency (+) Voiding diary – average voided volume (+) Voiding diary – 24-hour incontinence episodes *20Hz vs. no TENS* (+) Overactive Bladder Symptom Scores (+) Barthel Index (+) Urodynamic parameter – max. cystometric capacity (+) Urodynamic parameter – detrusor pressure, (+) Urodynamic parameter – max. flow rate (+) Voiding diary parameter – 24-hour frequency (+) Voiding diary – average voided volume (+) Voiding diary – 24-hour incontinence episodes *75Hz vs. no TENS* (+) Overactive Bladder Symptom Scores (+) Barthel Index (+) Urodynamic parameter – max. cystometric capacity (+) Urodynamic parameter – detrusor pressure, (+) Urodynamic parameter – max. flow rate (+) Voiding diary parameter – 24-hour frequency (+) Voiding diary – average voided volume (+) Voiding diary – 24-hour incontinence episodes

Urinary Incontinence

Author, Year PEDro Score, Country	Sample size	Intervention	Outcome and significance: (+) significant (-) not significant
Shin et al., 2016 PEDro score: 6	35 patients with subacute/chronic stroke	Pelvic floor muscle training (n=18) vs. No pelvic floor muscle training (n=17) *Treatment details*: PFMT: 50-minutes/session, 3 times/week for 6 weeks. Both groups also received education regarding urinary incontinence and pelvic floor muscle function, and conventional rehabilitation for 50-minutes/session, 3 times/week for 6 weeks.	**At 6 weeks (immediately post-treatment):** (+) Maximal vaginal squeeze pressure (perineometer) (+) Pelvic floor muscle activity – resting (+) Pelvic floor muscle activity – contracting (+) Pelvic floor muscle activity – relaxed (+) Bristol Female Urinary Symptoms Questionnaire (BFUSQ) – inconvenience in the activities of daily living (+) BFUSQ – urinary symptoms
Tibaek et al., 2004 PEDro score: 6	26 patients with subacute/chronic stroke	Pelvic floor muscle training and education (n=14) vs. No training/education (n=12) *Treatment details*: Pelvic floor muscle training: (a) education regarding urinary incontinence and pelvic floor muscles; (b) home exercises 1-2 times/day for 12 weeks; (c) group treatment for 12 weeks (frequency not specified). The control group received conventional rehabilitation with no specific training or education regarding urinary incontinence.	**At 12 weeks (immediately post-treatment):** (-) Short Form 36 Health Survey Questionnaire (SF-36) – Total (-) SF-36 – Physical Functioning (-) SF-36 – Role limitation due to physical problems (-) SF-36 – Body pain (-) SF-36 – General Health Perception (-) SF-36 – Vitality (-) SF-36 – Social functioning (-) SF-36 – Role limitation because of emotional problems (-) SF-36 – Mental health (-) The Incontinence Impact Questionnaire (IIQ) – Total (-) IIQ – Physical activity (-) IIQ – Travel

Author, Year PEDro Score, Country	Sample size	Intervention	Outcome and significance: (+) significant (-) not significant
			(-) IIQ – Social relationships (-) IIQ – Emotional health
Tibaek et al., 2005 (secondary analysis of Tibaek et al., 2004 study) PEDro score: 6	26 patients with subacute/chronic stroke	Pelvic floor muscle training and education (n=14) vs. No training/education (n=12) *Treatment details*: Pelvic floor muscle training: (a) education regarding urinary incontinence and pelvic floor muscles; (b) home exercises 1-2 times/day for 12 weeks; (c) group treatment for 12 weeks (frequency not specified). The control group received conventional rehabilitation with no specific training or education regarding urinary incontinence.	**At 12 weeks (immediately post-treatment):** (-) Frequency of voiding – total over 24 hours (+) Frequency of voiding – day (-) Frequency of voiding - night (-) Number of incontinence episodes (-) Number of incontinence pads (+) 24-hour Home Pad Test (-) Pelvic floor muscle function (-) Pelvic floor muscle strength (+) Pelvic floor muscle dynamic endurance (-) Pelvic floor muscle static endurance
Tibaek et al., 2007 (secondary analysis of Tibaek et al., 2004 study) PEDro score: 6	24 patients with subacute or chronic stroke	Pelvic floor muscle training and education (n=14) vs. No training/education (n=12) *Treatment details*: Pelvic floor muscle training: (a) education regarding urinary incontinence and pelvic floor muscles; (b) home exercises 1-2 times/day for 12 weeks; (c) group treatment for 12 weeks (frequency not specified). The control group received conventional rehabilitation with no specific training or education regarding urinary incontinence.	**At 6 months (follow-up):** (-) Short Form 36 Health Survey Questionnaire (SF-36) – Total (-) SF-36 – Physical Functioning (-) SF-36 – Role limitation due to physical problems (-) SF-36 – Body pain (-) SF-36 – General Health Perception (-) SF-36 – Vitality (-) SF-36 – Social functioning (-) SF-36 – Role limitation because of emotional problems (-) SF-36 – Mental health (-) The Incontinence Impact Questionnaire (IIQ) – Total

Author, Year PEDro Score, Country	Sample size	Intervention	Outcome and significance: (+) significant (-) not significant
			(-) IIQ – Physical activity (-) IIQ – Travel (-) IIQ – Social relationships (-) IIQ – Emotional health
Thomas et al., 2014 PEDro score: 6	413 patients with subacute stroke	Systematic voiding program (SVP) (n=164) vs. SVP + supported implementation (n=125) vs. Usual continence care (n=124) *Treatment details*: SVP: education, voiding regimens, bladder training and pelvic floor muscle training, prompted voiding. SVP + supported implementation: additional internal/external facilitation Interventions were provided for the duration of hospitalization.	**At 6 and at 12 weeks post-stroke**: (-) International Consultation on Incontinence Questionnaire – Short Form (-) Incontinence Severity Index (-) EuroQOL – mobility (-) EuroQOL – self-care (-) EuroQOL– usual activity (-) EuroQOL– pain or discomfort (-) EuroQOL – anxiety or depression (-) Incontinence Quality of Life Instrument (-) Leicester Urinary Symptom Questionnaire (-) Barthel Index
Wikander et al., 1998 PEDro score: 5	34 patients with acute stroke	Functional Independence Measure (FIM)-based intervention (n=21) vs. Bobath approach (n=13) *Treatment details*: Provided daily starting at admission until discharge from the hospital (average 83 and 75 days respectively). FIM: The FIM was used to govern rehabilitation planning and goal making on an individual basis.	**At discharge from the hospital (immediately post-treatment):** (+) Katz ADL Index (+) FIM–G (urinary incontinence) (+) Psychological General Well-Being Index (+) Mobility – transfer bed/chair/toilet (non-standardised 3-point scale) (+) Mobility – wheelchair-use (non-standardised 3-point scale) (-) Mobility – walking (non-standardised 3-point scale)