Motor Imagery / Mental Practice

Author, Year PEDro Score, Country	Sample size	Intervention	Outcome and significance: (+) significant (-) not significant
Bovend'Eerdt et al., 2010 PEDro score: 8 Country: Netherlands	28 patients with chronic stroke, 1 patient with traumatic brain injury and 1 patient with multiple sclerosis	Motor imagery training with conventional rehabilitation (n=15) vs. Conventional rehabilitation (n=15) **Treatment details:** 6 weeks (frequency and duration of sessions not specified) Motor imagery training consisted of showing films of information on motor imagery and motor imagery strategy and was tailored to individual goals. Conventional rehabilitation consisted of physical practice films, with general information about rehabilitation and motor strategy.	**At 6 weeks (post-treatment):** (-) Goal Attainment Scale (-) Barthel Index (-) Rivermead Mobility Index (-) Nottingham Extended Activities of Daily Living (-) Timed Up and Go Test (-) Action Research Arm Test
Braun et al., 2012 PEDro score: 7 Country: Netherlands	36 patients with acute/subacute stroke	Mental practice with conventional rehabilitation (n=18) vs. Conventional rehabilitation (n=18) **Treatment details:** 10 sessions over 6 weeks	**At 6 weeks (post-treatment):** (-) Patient perceived effect on performance of daily activities (10-point scale) (-) Motricity Index (-) Barthel Index (-) Nine Hole Peg Test (-) Berg Balance Scale (-) Rivermead Mobility Index (-) 10 Meters Walk Test

Author, Year PEDro Score, Country	Sample size	Intervention	Outcome and significance: (+) significant (-) not significant
		Mental practice included individually tailored sessions consisting of 4 stages: explaining the concept, developing imagery techniques, applying mental practice and consolidating. Participants in the control group were encouraged to do "homework" by practicing tasks that they had difficulty with.	**At 6 months (follow-up):** (-) Patient perceived effect on performance of daily activities (10-point scale) (-) Motricity Index (-) Barthel Index (-) Nine Hole Peg Test (-) Berg Balance Scale (-) Rivermead Mobility Index (-) 10 Meters Walk Test
Cacchio et al., 2009 PEDro score: 3 Country: Italy	24 patients with chronic stroke and complex regional pain syndrome	Mirror therapy (n=8) vs. Covered mirror (n=8) vs. Mental imagery (n=8) **Treatment details:** Mental imagery treatment regime not specified. Mirror therapy consisted of performing principal (proximal to distal) movements of the affected upper extremity for 30 minutes/day for 4 weeks.	**At 4 weeks (post-treatment):** (+) Pain - Visual Analogue Scale* *In favor of mirror therapy vs. mental imagery and in favour of mirror therapy vs. covered mirror.
Cho et al., 2012 PEDro score: 6 Country: South Korea	28 patients with chronic stroke	Motor imagery training + gait training (n=15) vs.	**At 6 weeks (post-treatment):** (+) Functional Reach Test (+) Timed Up and Go Test

Author, Year PEDro Score, Country	Sample size	Intervention	Outcome and significance: (+) significant (-) not significant
		Gait training (n=13) **Treatment details:** 15 minutes/session, 3 times/week for 6 weeks. Motor imagery training was provided for 15 minutes prior to gait training and consisted of visual and kinematic imagery methods. Gait training consisted of walking on a motorized treadmill with self-selected walking speed. Both groups received gait training for 30 minutes/session, 3 times/week for 6 weeks.	(+) 10 Meter Walk Test (+) Fugl-Meyer Assessment – Lower Extremity
Dickstein et al., 2013 PEDro score: 6 Country: Israel	25 patients with chronic stroke	Motor imagery training (n=13) vs. Physical therapy (n=12) **Treatment details:** 15-minutes/session, 3 times/week for 4 weeks. Motor imagery training consisted of imagery scripts aimed at improving home and community walking and fall-related self-efficacy. Kinaesthetic, visual and motivational imagery was used.	**At 4 weeks (post-treatment):** (+) 10 Meter Walk Test (-) Community Ambulation – step activity monitor (-) Maximal activity (steps/minute during most active hour of the day) (-) Falls Efficacy Scale – Swedish Version **At 6 weeks (follow-up):** (+) 10 Meter Walk Test (-) Community Ambulation – step activity monitor (-) Maximal activity (steps/minute during most active hour of the day)

Author, Year PEDro Score, Country	Sample size	Intervention	Outcome and significance: (+) significant (-) not significant
		Physical therapy consisted of exercises with the aim to improve the affected upper extremity motor function. Note: subjects who had initially received the control treatment crossed-over to receive the experimental intervention.	(-) Falls Efficacy Scale – Swedish Version
Ertelt et al., 2007 PEDro score: 5 Country: Germany	15 patients with chronic stroke	Action observation therapy (n=8) vs. Conventional rehabilitation (n=7) **Treatment details:** 90 minutes/session over 18 consecutive days. Action observed therapy consisted of watching 6 min videos of sequences of arm and hand movements and then performed the movements with their paretic upper limb using the same objects as shown in the video film for 6 min following the video. Control group received similar therapy, but instead watched a video with geometric symbols and letters instead of action sequences.	**At 18 days (post-treatment):** (+) Frenchay Arm Test (FAT) (+) Wolf Motor Function Test (WMFT) (+) Stroke Impact Scale (SIS) **At 8 weeks (follow-up)*:** (+) FAT (+) WMFT (+) SIS *Participants in the action observation group only; results indicate significant within-group differences.
Ferreira et al., 2011 PEDro score: 5 Country: Brazil	15 patients with subacute/chronic stroke	Mental practice with conventional rehabilitation (n=5) vs.	**At 5 weeks (post-treatment):** (+) Behavioral Inattention Test (BIT)* (-) Functional Independence Measure (FIM) – total

Author, Year PEDro Score, Country	Sample size	Intervention	Outcome and significance: (+) significant (-) not significant
		Visual scanning with conventional rehabilitation (n=5) vs. Conventional rehabilitation alone (n=5) **Treatment details:** 10 x 1-hour/session over 5 weeks. Mental practice included 2 tasks of motor imagery (i.e. showing pictures of movement sequences) and 2 tasks of visual imagery. Visual scanning included 2 extrapersonal tasks and 2 peripersonal tasks for neglect where participant was asked to scan the training environment starting from the left and then reach to touch geometrical figures on the board. Conventional rehabilitation consisted of physiotherapy.	(+) FIM – self care items* **At 3 months (follow-up):** (+) BIT* (-) FIM – total *In favor of visual scanning + conventional rehabilitation vs. conventional rehabilitation alone.
Hong et al., 2012 PEDro score: 8 Country: Republic of Korea	14 patients with chronic stroke	Mental imagery (MI) with EMG-triggered electric stimulation (FES) (n=7) vs. Functional electrical stimulation (FES) (n=7) **Treatment details:**	**At 4 weeks (post-treatment):** (+) Fugl-Meyer Assessment – Upper Extremity (-) Motor Activity Log – Among of Use (-) Motor Activity Log – Quality of Movement (-) Modified Ashworth Scale (-) Modified Barthel Index (+) Cortical changes - cerebral glucose metabolism*

Author, Year PEDro Score, Country	Sample size	Intervention	Outcome and significance: (+) significant (-) not significant
		20 minutes/session, 2 times/day, 5 days/week for 4 weeks. MI + ES consisted of mental imagery (12 sec), stimulation (6 sec) and relaxation (12 sec). MI included imagery of a simple waiving movement of the arm. FES consisted of surface electrodes to the affected forearm provided at 35Hz frequency, 200 µS pulse width.	*in the supplementary motor, precentral, postcentral gyri of the contralesional hemisphere.
Hosseini et al., 2012 PEDro score: 6 Country: Iran	30 patients chronic stroke	Mental practice + occupational therapy (n=15) vs. Occupational therapy (n=15) **Treatment details:** 45 minutes/session, 3 days/week for 5 weeks. Mental practice consisted of visualizing standing up from an adaptable armchair, walking for 3 meters, turning, stopping, walking back to the chair, and sitting. Mental practice was performed for 15 minutes of every 45-minute OT session. Occupational therapy consisted of muscle stretching exercises, positioning, facilitating normal pattern of	**At 5 weeks (post-treatment):** (+) Timed Up-and-Go Test (+) Berg Balance Scale **At 7 weeks (follow-up):** (-) Timed Up-and-Go Test (-) Berg Balance Scale

Author, Year PEDro Score, Country	Sample size	Intervention	Outcome and significance: (+) significant (-) not significant
		movement, facilitator and inhibitory techniques, reflex inhibitory patters, tone normalization.	
Hwang et al., 2010 PEDro score: 6 Country: Republic of South Korea	24 patients with chronic stroke	Videotape-based locomotor imagery training (n=13) vs. Sham imagery training (n=11) **Treatment details:** 25-30-minute sessions, 5 times/week for 4 weeks. Videotape-based locomotor imagery training consisted of watching a video of a person and the patient walking and active mental imagery of walking. Sham imagery training consisting of watching television programs on topics related to health.	**At 4 weeks (post-treatment):** (+) 10 Meter Walk Test (+) Stride length (+) Joint motion (-) Cadence (+) Activities-Specific Balance Confidence Scale (+) Berg Balance Scale (+) Dynamic Gait Index (+) Modified Emory Functional Ambulation Profile
Ietswaart et al., 2011 PEDro score: 7 Country: UK	121 patients with subacute stroke	Mental rehearsal training group (n=39) vs. Non-motor mental rehearsal training control group (n=31) vs. Conventional rehabilitation (n=32) **Treatment details:**	**At 4 weeks (post-treatment):** (-) Action Research Arm Test (-) Grip strength (-) Timed manual dexterity task (-) Barthel Index (-) Modified Functional Limitations Profile

Author, Year PEDro Score, Country	Sample size	Intervention	Outcome and significance: (+) significant (-) not significant
		45 min training sessions 3x/week + 30 min audiotape training 2x/week for 4 weeks Mental rehearsal training consisted of structured training program involving verbal information, pictorial description of movements related to grasping objects, action observation and imagery. Non-motor mental rehearsal training consisted of mental imagery of objects rather than actions.	
Kim & Lee (2013) PEDro scale: 6 Country: Republic of Korea	30 patients with chronic stroke	Motor imagery training + physical therapy (n=10) vs. Action observation training + physical therapy (n=10) vs. Physical therapy alone (n=10) **Treatment details:** 30-minutes/session, 5 times/week for 4 weeks. Motor imagery training consisted of listening to a motor imagery program through computer speaker and then performing the physical training exercises. Action observation training consisted of viewing a task video, and training with therapists based on the video.	**At 4 weeks (post-treatment):** (+) Times Up and Go Test* (-) Functional Reach Test (-) Walking Ability Questionnaire (-) Functional Ambulation Category (+) GAITRite system – gait speed* (+) GAITRite system – cadence* (+) GAITRite system – single limb support (affected side)* (-) GAITRite system – step length (affected side) (-) GAITRite system – stride length (affected side) (-) GAITRite system – double limb support (affected side) *In favor of action observation training vs. physical therapy alone.

Author, Year PEDro Score, Country	Sample size	Intervention	Outcome and significance: (+) significant (-) not significant
		Physical therapy was provided to all participants for 30 minutes/session, 2 times/day, 5 days/week for 4 weeks and included exercises based on neurodevelopmental approach.	
Lee et al., 2011 PEDro score: 4 Country: Republic of South Korea	24 patients with chronic stroke	Motor imagery training + treadmill training (n=13) vs. Treadmill training alone (n=11) **Treatment details:** 30-minute sessions, 3x/week for 6 weeks in addition to treadmill training 30-minute sessions, 3x/week for 6 weeks. Motor imagery training consisted of visual and auditory training and visual and kinematic in conjunction with treadmill training sessions. Treadmill training was carried out using a treadmill where gait speed for all subjects was determined using the self-paced capability of the treadmill, and subjects were able to modify gait speed at will.	**At 8 weeks (2 weeks post-treatment):** (-) Gait speed (-) Cadence (-) Step length – paretic (-) Step length - nonparetic (-) Stride length - paretic (-) Stride length – nonparetic (-) Single limb support – paretic (-) Single limb support – nonparetic (-) Double limb support – paretic (-) Double limb support - nonparetic
Liu et al., 2004 PEDro score: 7 Country: China	46 patients with acute stroke	ADL training + motor imagery training (n=26) vs.	**At 3 weeks (post intervention):** (+) Performance of trained ADLs (7-point Likert Scale)

Author, Year PEDro Score, Country	Sample size	Intervention	Outcome and significance: (+) significant (-) not significant
		ADL training (n=20) **Treatment details:** 1 hour/session, 5 times/week for 3 weeks. Motor imagery consisted of (i) using computer images and movies to analyze ADL task sequence, (ii) identifying problems with task performance and correcting errors using motor imagery, (iii) performing the actual imagined tasks.	(+) Performance of untrained ADLs (7-point Likert Scale) (-) Color Trails Test (-) Fugl-Meyer Assessment – Upper extremity (FMA-UE) (-) FMA – Lower extremity (FMA-LE) (-) FMA – sensation **At 1-month (follow-up):** (+) Performance of trained ADLs (7-point Likert Scale) (-) Performance of untrained ADLs (7-point Likert Scale)
Liu et al., 2009 PEDro score: 4 Country: China	35 patients with acute stroke	Mental imagery + physical therapy (n=18) vs. Conventional occupational therapy + physical therapy (n=17) **Treatment details:** 1-hour/session, 5 times/week for 3 weeks. Mental imagery consisted of task truncation, self-reflection on abilities and deficits in task performance, feedback (using video playback), mental rehearsal of task, and actual task performance.	**At 3 weeks (post-treatment):** 5 untrained tasks in a training environment and a novel simulated environment: (-) Sweeping (+) Tidying (+) Cooking (+) Going outdoors (-) Going to a shop 3 untrained tasks in a novel simulated environment (-) Cooking (+) Cleaning (+) Going to a resource center

Author, Year PEDro Score, Country	Sample size	Intervention	Outcome and significance: (+) significant (-) not significant
		Conventional occupational therapy consisted of demonstration and rehearsal. Physical therapy consisted of mobilization, strengthening and walking exercises.	
Malouin et al., 2009 PEDro score: 6 Country: Canada	12 patients with chronic stroke	Mental practice and physical practice (n=5) vs. Cognitive training and physical practice (n=3) vs. No training (n=4) **Treatment details:** 1-hour/session, 3 times/week for 4 weeks. Physical practice comprised rising up from a chair and sitting down Mental practice comprised mental repetitions of the movement between each physical repetition and kinaesthetic imagery. Cognitive training comprised mental tasks not related to the action (e.g. number recall).	**At 4 weeks (post-treatment):** (+) Leg loading change scores* **At 7 weeks (follow-up):** (-) Leg loading change scores * in favour of mental practice compared to both cognitive training and no training

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Muller et al., 2007 PEDro score: 4 Country: Germany	17 patients with acute/subacute stroke	Mental rehearsal (n=6) vs. Motor practice (n=6) vs. Conventional rehabilitation (n=5) **Treatment details:** 30-minute/session, 5 days/week for 4 weeks. Mental rehearsal involved video demonstration and mental rehearsal of a non-sequential finger opposition task. Motor practice involved physical practice of the non-sequential finger opposition task.	**At 4 weeks (post-treatment):** (+) Grip strength* (+) Jebsen hand function test (JHFT) – writing* (+) JHFT – simulated feeding* (-) JHFT – turning (-) JHFT – stacking (-) JHFT – picking up (-) JHFT – lifting easy (-) JHFT – lifting heavy *in favour of both mental rehearsal and motor rehearsal compared to conventional rehabilitation Note: change over time was measured by comparing mean change of performance during treatment (data taken over 4 weeks of treatment) compared to baseline normalization (data taken over 4 baseline measures).
Nilsen et al., 2012 PEDro score: 6 Country: USA	19 patients with chronic stroke	Mental practice training using internal perspective (n=6) vs. Mental practice training using external perspective (n=7) vs. Relaxation imagery (n=6)	**At 6 weeks (post-treatment):** (+) Fugl-Meyer Assessment – Upper Extremity *^ (+) Jebsen-Taylor Test of Hand Function *^ (-) Canadian Occupational Performance Measure *In favor of intervention 1 vs. control ^ In favor of intervention 2 vs. control

Author, Year PEDro Score, Country	Sample size	Intervention	Outcome and significance: (+) significant (-) not significant
		Treatment details: All groups received occupational therapy for 30-minutes/session, 2 times/ week for 6 weeks. Treatments were performed for 10 minutes/session following occupational therapy sessions. Internal perspective comprised using first person visual imagery perspective; External perspective comprised using third-person visual imagery perspective.	
Oostra et al., 2015 PEDro score: 6 Country: Belgium	44 patients with subacute stroke	Mental imagery (n=21) vs. Muscle relaxation (n=23) **Treatment details:** 30-minutes/session, 5 days/week for 6 weeks. Mental imagery was performed from an internal perspective with both visual (viewing task performance) and kinesthetic (feeling the experience of task performance) modes, according to individuals' needs, focusing on gait activities. Muscle relaxation followed the principles of progressive relaxation.	**At 6 weeks (post-treatment):** (-) Movement Imagery Questionnaire Revised – visual scale (+) Movement Imagery Questionnaire Revised – kinesthetic scale (-) Walking Trajectory Test – imagery walking time/actual walking time (+) 10 Meter Walk Test (-) Fugl-Meyer Assessment – Lower Extremity (far transfer)

Author, Year PEDro Score, Country	Sample size	Intervention	Outcome and significance: (+) significant (-) not significant
		Both groups received conventional rehabilitation for an additional 3 hours/day, 5 days/week.	
Page, 2000 PEDro score: 4 Country: USA	16 patients with chronic stroke	Motor imagery + occupational therapy (n=8) vs. Occupational therapy alone (n=8) **Treatment details:** 20 minutes/session, 3 times/week for 4 weeks. Mental imagery consisted of listening to a videotape, relaxation, cognitive visual images related to weight-bearing exercises using the affected limb, and refocusing the participant back into the environment. Occupational therapy consisted of neurodevelopmental techniques and compensatory strategies using the unaffected arm. Occupational therapy was provided for 30 minutes/session, 3 times/week for 4 weeks.	**At 4 weeks (post-treatment):** (+) Fugl-Meyer Assessment – Upper Extremity
Page et al., 2001 PEDro score: 5 (randomized feasibility study) Country: USA	13 patients with acute/subacute/chronic stroke	Motor imagery (n=8) vs. Education (n=5) **Treatment details:**	**At 6 weeks (post treatment):** (+) Fugl-Meyer Assessment – Upper Extremity* (+) Action Research Arm Test* *Although marked improvements were noted in favour of the intervention group, the study was not powered to find significant differences

Author, Year PEDro Score, Country	Sample size	Intervention	Outcome and significance: (+) significant (-) not significant
		10 minutes/session, 3 times/week for 6 weeks. Motor imagery consisted of listening to a 10-minute audio-tape that facilitated relaxation and visualizations. Patients were asked to perform the same 10 minutes of mental imagery at home on 2 non-consecutive days per week. Stroke information was provided via 10-minute auditory tape, 2 times/week for 6 weeks. All participants received occupational therapy for 1 hour/session, 3 times/week for 6 weeks. OT consisted of upper and lower extremities exercises and ADL training.	between groups, nor was it a hypothesis-testing study.
Page et al., 2005 PEDro score: 5 Country: USA	11 patients with chronic stroke	Motor imagery (n=6) vs. Relaxation (n=5) **Treatment details:** 30 minutes/session, 2 times/week for 6 weeks. Motor imagery consisted of listening to a recorded audiotape, relaxation, suggestions for internal, cognitive images related to the use of the affected upper extremity in 3 functional tasks, refocusing participants to the environment.	**At 6 weeks (post treatment):** (+) Action Research Arm Test (-) Motor Activity Log

Author, Year PEDro Score, Country	Sample size	Intervention	Outcome and significance: (+) significant (-) not significant
		Relaxation consisted of listening to an audiotape of progressive relaxation program.	
Page et al., 2007 PEDro score: 5 Country: USA	32 patients with chronic stroke	Motor imagery (n=16) vs. Relaxation (n=16) **Treatment details:** 30 minutes/session, 2 times/week for 6 weeks. Motor imagery included listening to a recorded audiotape, relaxation, suggestions for internal, cognitive images related to the use of the affected upper extremity in 3 functional tasks, refocusing participants to the environment. Relaxation consisted of listening to an audiotape of progressive relaxation program. Both groups received physical practice for 30 minutes/session, 2 times/week for 6 weeks, which consisted of 5 specific arm motions performed during ADLs.	**At 7 weeks (1 week post end of treatment):** (+) Fugl-Meyer Assessment – Upper Extremity (+) Action Research Arm Test
Page et al., 2009 PEDro score: 5 Country: USA	10 patients with chronic stroke	Modified constraint induced therapy (mCIMT) + mental practice (n=5)	**At 10 weeks (post-treatment):** (+) Fugl-Meyer Assessment – Upper Extremity (+) Action Research Arm Test

Author, Year PEDro Score, Country	Sample size	Intervention	Outcome and significance: (+) significant (-) not significant
		vs. mCIMT alone (n=5) **Treatment details:** 30 minutes/session, 5 days/week for 10 weeks. Mental practice comprised cognitive rehearsal of activities of daily living. mCIMT comprised restraint of the less affected arm for 5 hours/day, 5 days/week and structured therapy 3 days/week for 10 weeks.	**At 3 months (follow-up):** (+) Fugl-Meyer Assessment – Upper Extremity (+) Action Research Arm Test
Page et al., 2011 PEDro score: 7 Country: USA	29 patients with chronic stroke	Mental Imagery for 20 mins (n=8), 40 mins (n=6) or 60 mins (n=7) vs. Sham audiotaped intervention (n=8) **Treatment details:** 20/40/60-minute sessions, 3 days/week for 10 weeks. Mental imagery consisted of listening to an audiotape including opening of relaxation, asking patients to imagine themselves in a warm, relaxing place (e.g., a beach), and asking them to contract and relax their muscles (i.e., progressive relaxation). This portion of the tapes was followed by suggestions for internal, cognitive	**At 10 weeks (post-treatment):** (-) Fugl-Meyer Assessment – Upper Extremity (-) Action Research Arm test

Author, Year PEDro Score, Country	Sample size	Intervention	Outcome and significance: (+) significant (-) not significant
		polysensory (i.e., using both kinesthetic and visual cues) images related to using the affected arm in one of 5 functional tasks, which had been practiced during the preceding RTP sessions. The tape concluded with 5 minutes of refocusing into the room. Sham audiotape intervention consisted of listening to 20-minute "sham" tapes on stroke prevention, information on stroke, and exercises for the affected leg + relaxation. The sham intervention was provided 3 days/week for 10 weeks. All groups received repetitive task-specific training for 30 minutes/session, 3 days/week for 10 weeks, which comprised ADL training and upper extremity motor function exercises.	
Park et al., 2015 PEDro score: 3 Country: Republic of Korea	29 patients with subacute/chronic stroke	Mental practice + conventional rehabilitation (n=14) vs. Conventional rehabilitation (n=15) **Treatment details:** 30 minutes/session, 5 times/week for 2 weeks. Mental practice consisted of task imagination and training of upper extremity activities of turning a page, putting beans, and stacking plastic cups.	**At 2 weeks (post-treatment):** (+) Action Research Arm Test (+) Fugl-Meyer Assessment – Upper Extremity (+) Modified Barthel Index

Author, Year PEDro Score, Country	Sample size	Intervention	Outcome and significance: (+) significant (-) not significant
		Conventional rehabilitation consisted of physical and occupational therapy. Both groups received conventional rehabilitation for 20 minutes/session, 5 times/week for 2 weeks.	
Rajesh, 2015 PEDro score: NA (quasi-experimental study) Country: Saudi Arabia	30 patients with stroke (stage of stroke recovery not specified)	Mental practice + conventional occupational therapy (n=15) vs. Conventional occupational therapy alone (n=15) **Treatment details:** 30 minutes/session for 3 weeks (frequency not specified). Mental practice consisted of relaxation techniques and exercises related to motor imagery: (i) using computer images and movies to analyze ADL task sequence, (ii) identifying problems with task performance and correcting errors using motor imagery, (iii) performing the actual imagined tasks. Occupational therapy was provided for 3 weeks (frequency and nature of therapy are not specified).	**At 3 weeks (post-treatment):** (+) Motor Activity Log (+) Stroke-Specific Quality of Life
Riccio et al., 2010 PEDro score: 5 (cross-over RCT) Country: Italy	36 patients with subacute stroke	Mental practice + conventional rehabilitation (n=18) vs.	**At 3 weeks (post-treatment, phase 1):** (+) Arm Functional Test – Functional Ability Scale (AFT-FAS) (+) Arm Functional Test – Time (AFT-T)

Author, Year PEDro Score, Country	Sample size	Intervention	Outcome and significance: (+) significant (-) not significant
		Conventional rehabilitation alone (n=18) **Treatment details:** Mental practice was provided 2 times/day, 5 days/week for 3 weeks and consisted of listening to an audiotape while imagining activities that involve upper extremity movements. Conventional rehabilitation was provided for 3 hours/day, 5 days/week during each 3-week trial.	(+) Motricity Index – Upper Extremity (MI-UE) **At 6 weeks (post-treatment, phase 2):** (+) AFT-FAS (+) AFT-T (+) MI-UE Note: results were in favour of conventional rehabilitation + mental practice at both time points
Schuster et al,. 2012 PEDro score: 7 Country: Switzerland	41 patient with subacute/chronic stroke	Embedded mental imagery training + physical therapy (n=13) vs. Added mental imagery training + physical therapy(n=12) vs. Control therapy + physical therapy (n=14) **Treatment details:** 6 x 45-50 min sessions over 2 weeks. Embedded mental imagery training was provided WITH physical therapy and consisted of using imagination of physical therapy activities prior their actual practice.	**At 2 weeks (post-treatment) and at 1 month (follow-up):** (-) Time to complete motor task (-) Chedoke McMaster Stroke Assessment - activity scale (-) Stage of motor task – Adams and Tyson classification (-) Barthel Index (-) Berg Balance Scale (-) Imaprax Questionnaire (-) Kinaesthetic and Visual Imagery Questionnaire (-) Activities-Specific Balance Confidence Scale (-) Wellbeing (Visual Analogue Scale)

Author, Year PEDro Score, Country	Sample size	Intervention	Outcome and significance: (+) significant (-) not significant
		Added mental imagery training was provided AFTER physical therapy and consisted of using imagination of physical therapy activities. Physical therapy was provided for 25-30 minutes/session and consisted of exercises and activities based on neuro-physiological and motor learning approach. Control therapy was provided for 6 x 45-50 minutes/session and consisted of listening to information about stroke on tape.	
Timmermans et al., 2013 PEDro score: 7 Country: Netherlands	42 patients with acute or subacute stroke	Mental practice + conventional rehabilitation (n=21) vs. Neurodevelopmental therapy + conventional therapy (n=21) **Treatment details:** 10 minutes/session, 3 times/day for 6 weeks. Mental practice consisted of watching videotapes on mental imagery training and practicing mental imagery in the use of upper extremity in ADLs.	**At 6 weeks (post-treatment):** (-) Barthel Index (-) Frenchay Activity Index (-) Fugl-Meyer Assessment – Upper Extremity (-) Frenchay Arm Test (-) Wolf Motor Function Test (-) Accelerometry **At 6 months (follow-up):** (-) Barthel Index (-) Frenchay Activity Index (-) Fugl-Meyer Assessment – Upper Extremity (-) Frenchay Arm Test (-) Wolf Motor Function Test (-) Accelerometry **At 12 months (follow-up):** (-) Barthel Index

Author, Year PEDro Score, Country	Sample size	Intervention	Outcome and significance: (+) significant (-) not significant
			(-) Frenchay Activity Index (-) Fugl-Meyer Assessment – Upper Extremity (-) Frenchay Arm Test (-) Wold Motor Function Test (-) Accelerometry
Welfringer et al., 2011 PEDro score: 7 Country: Germany	30 patients with acute or subacute stroke	Visuomotor imagery with conventional rehabilitation (n=15) vs. Conventional rehabilitation (n=15) **Treatment details:** 30-minutes/session, 2 times/day for 3 weeks (total of 28-30 sessions). Visuomotor imagery consisted of mentally practicing positioning and movements of the contalesional upper extremity in respective fashion and as vividly and intensively as possible, in first-person perspective.	**At 3 weeks (post-treatment):** (-) Bells Cancellation Test (-) Reading Test (-) Flower Copying Test (-) Clock Drawing Test (-) Representation test: body touching (-) Representation test: visual arm imagery (-) Representation test: kinaesthetic arm imagery (-) Arm function test: sensation (-) Action Research Arm Test