

Author, Year PEDro Score, Country	Sample size	Intervention	Outcome and significance: (+) significant (-) not significant
<p>Bunketorp-Kall et al., 2017 PEDro score: 9 Country: Australia & Sweden</p>	<p>123 patients with chronic stroke</p>	<p>Rhythm and music therapy (RMT) (n=41) vs. Horse-riding therapy (HRT) (n=41) vs. No treatment (delayed RMT) (n=41) <u>Treatment details:</u> 90 minutes (RMT) or 240 minutes (HRT) /session, 2 days/week for 12 weeks. RMT: while listening to music, participants carried out rhythmic and cognitively demanding hand and feet movements, by clapping/tapping their hands on their knees, or stamping their feet on the floor in time to the near, in various sequences and combinations, sometimes simultaneously. HRT: consisted of riding the horse and interaction time with the horse. During riding, participants engaged in specific exercises individually tailored to their needs and horse-riding ability and included: balance and trunk rotation exercises, specific body parts exercises (e.g. reaching for horses' ears), and cognitive training (e.g. planning the route). Interaction with the horse included its preparation (e.g. grooming and equipment set-up).</p>	<p>At 12 weeks (post-treatment): <i>RMT vs. control</i> (+) Stroke Impact Scale (SIS) – proportion of individuals reporting meaningful recovery (+) SIS – change in scores from baseline (-) Timed Up and Go Test (TUG) (-) Berg Balance Scale (BBS) (+) Backstrand, Dahlberg and Liljenas Balance Scale (BDL-BS) (+) GRIPPIT – right hand (max, mean, final: max grip force only) (+) GRIPPIT – left hand (max, mean, final: final grip force only) (-) Barrow Neurological Institute Screen for Higher Cerebral Functions (BNIS) (-) Letter-Number Sequencing Test (LNS) <i>HRT vs. control</i> (+) Stroke Impact Scale (SIS) – proportion of individuals reporting meaningful recovery (+) SIS – change in scores from baseline (+) Timed Up and Go Test (TUG) (+) Berg Balance Scale (BBS) (+) Backstrand, Dahlberg and Liljenas Balance Scale (BDL-BS) (-) GRIPPIT – right hand (max, mean, final) (-) GRIPPIT – left hand (max, mean, final) (-) Barrow Neurological Institute Screen for Higher Cerebral Functions (BNIS) (-) Letter-Number Sequencing Test (LNS)</p>

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			<p>At 3 months (follow-up): <i>RMT vs. control</i> (+) SIS– proportion of individuals reporting meaningful recovery (+) SIS – change in scores from baseline <i>HRT vs. control</i> (+) SIS– proportion of individuals reporting meaningful recovery (+) SIS – change in scores from baseline At 6 months (follow-up): <i>RMT vs. control</i> (+) SIS– proportion of individuals reporting meaningful recovery (+) SIS – change in scores from baseline (-) TUGT (-) BBS (+) BDL-BS (-) GRIPPIT – right hand (+) GRIPPIT – left hand (final grip force only) (-) BNIS (+) LNS <i>HRT vs. control</i> (+) SIS– proportion of individuals reporting meaningful recovery (+) SIS – change in scores from baseline (+) TUG (-) BBS (-) BDL-BS (-) GRIPPIT – right hand (max, mean, final) (-) GRIPPIT – left hand (max, mean, final)</p>

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			(-) BNIS (-) LNS Note: there were no reported differences between RMT and HRT.
Cha et al., 2014 PEDro score: 7 Country: Korea	20 patients with chronic stroke	Intensive gait training with rhythmic auditory stimulation (RAS) (n=10) vs. Gait training alone (n=10) <u>Treatment details:</u> 30-minutes/session, 5 days/week for 6 weeks. <i>RAS gait training:</i> use of a metronome, MIDI Cuebase musical instrument digital interface program and a KM Player; participants were instructed to perform walking exercises matching the rhythmic stimulation. <i>Gait training:</i> provided at the same frequency and duration. Both groups also received physical therapy for 30 mins/day, 5 days/week for 6 weeks.	At 6 weeks (post-treatment): (+) Berg Balance Scale (+) Gait velocity (+) Cadence (+) Stride length (affected side only) (+) Double stance period (affected side only) (+) Stroke Specific Quality of Life Scale
Chouhan & Kumar, 2012 PEDro score: 7 Country: India	45 patients with acute/subacute stroke	Rhythmic auditory stimulation (RAS) gait/fine/gross motor training (n=15) vs. Visual cueing gait/fine/gross motor training (n=15) vs. No additional gait/fine/gross motor training (n=15) <u>Treatment details:</u> 2 hours/session, 3 times/week for 3 weeks. <i>RAS:</i> activities (gross motor and fine motor) and walking for 10 meters by keeping pace with metronome beat.	At 1 week of treatment: <i>RAS vs. no training</i> (-) Dynamic Gait Index (DGI) (-) Fugl-Meyer Assessment – Upper Extremity (FMA-UE) <i>RAS vs. Visual cueing</i> (+) DGI* (-) FMA-UE*

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		<p><i>Visual cueing</i>: time-matched; static marching, dynamic marching, tandem walking and walking in a circle on yellow color stripes that were placed longitudinally in a 10 meter walkway + gross/fine motor training using colored objects such as a ball, pegs.</p> <p>All groups received <i>conventional rehabilitation</i>: stretching exercises and gait training. Details on intensity of conventional rehabilitation not provided.</p>	<p><i>Visual cueing vs. no training</i> (+) DGI (-) FMA-UE</p> <p>At 2 weeks of treatment: <i>RAS vs. no training</i> (+) DGI (-) FMA-UE <i>RAS vs. Visual cueing</i> (+) DGI* (+) FMA-UE*</p> <p><i>Visual cueing vs. no training</i> (+) DGI (+) FMA-UE</p> <p>At 3 weeks (post-treatment): <i>RAS vs. no training</i> (+) DGI (+) FMA-UE <i>RAS vs. Visual cueing</i> (+) DGI* (+) FMA-UE*</p> <p><i>Visual cueing vs. no training</i> (+) DGI (+) FMA-UE</p> <p>At 4 weeks (follow-up): <i>RAS vs. no training</i> (+) DGI (+) FMA-UE <i>Visual cueing vs. no training</i> (+) DGI (+) FMA-UE</p>

Author, Year PEDro Score, Country	Sample size	Intervention	Outcome and significance: (+) significant (-) not significant
			<i>RAS vs. Visual cueing</i> (+) DGI* (+) FMA-UE* * in favour of visual cueing vs. RAS
Conklyn et al., 2012 PEDro scale: 5 Country: USA	30 patients with acute/subacute stroke and Broca's aphasia	Modified melodic intonation therapy (MMIT) (n=16) vs. Education (n=14) <u>Treatment details:</u> 3 x 10-15 minute sessions MMIT: singing phrase(s) (n=1 at session 1; n=2 at session 2; n=2-3 at session 3), tapping to the rhythm of the phrase. Education: participants discussed their impairments, different forms of treatment, outcomes and issues resulting from aphasia with their music therapist.	At 1st visit (post 1 treatment session): (+) modified Western Aphasia Battery (mWAS) – responsiveness (+) mWAS – repetition (+) mWAS – total score At 2nd visit (post 2 treatment sessions): (+) modified Western Aphasia Battery (mWAS) – responsiveness (-) mWAS – repetition (-) mWAS – total score Note: no results provided post 3 rd treatment session.
Hill et al., 2011 PEDro score: N/A (quasi-experimental study design) Country: USA	10 patients with chronic stroke	Interactive metronome (IM) + occupational therapy (OT) (n=6) vs. OT alone (n=4) <u>Treatment details:</u> 1-hour/session, 3 times/week for 10 weeks. Both treatments consisted of: (1) warm-up activities; (2) pre-functional activities for 5-10 mins; (3) IM vs. functional activities sessions for 10-30 mins; (4) functional activities/COMP tasks for 10-30 mins; and (5) passive ROM and stretching ending activities.	At 11 weeks (1 week post treatment): (-) Fugl-Meyer Assessment – Upper Extremity (-) Arm Motor Ability Test* (-) Box and Block Test (-) Stroke Impact Scale (-) Canadian Occupational Performance Measure (COPM – performance) (-) COPM – satisfaction *Significant between-group difference in favor of OT alone vs. IM+OT group.

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		<p><i>Interactive metronome:</i> computer-based rhythmic and auditory training program where the participant aimed to match the rhythmic auditory beat with repeated limb movements, such as clapping hands.</p> <p><i>Occupational therapy:</i> using the Canadian Occupational Performance Measure (COMP) tasks/functional activities practice without interactive metronome.</p>	<p>NB: significant between-group differences were found at baseline in FMA (OT>IM+OT), AMAT (OT>IM+OT), and BBT (IM+OT>OT).</p>
<p>Jeong et al., 2007 PEDro score: 5 Country: USA</p>	<p>36 patients with chronic stroke</p>	<p>Rhythmic auditory stimulation (RAS) music - movement training (n=18) vs. No treatment (n=18) <u>Treatment details:</u> 2-hours/session, once/week for 8 weeks. <i>RAS music-movement training:</i> singing, performing dynamic rhythmic motions involving the whole body, using musical instruments/rhythmic tools; home exercise provided (3 times/week). The control group received referral information about available usual care services.</p>	<p>At 8 weeks (post-treatment): (-) Range of motion (ROM) – shoulder flexion (-) ROM – ankle flexion (+) ROM – ankle extension (+) Back Scratch Test (upward/downward) (+) Profile of Mood States (+) Relationship Change Scale (-) Stroke Specific Quality of Life Scale</p>
<p>Jun et al., 2012 PEDro score: 3 Country: Korea</p>	<p>40 patients with acute stroke</p>	<p>Music-movement therapy (MMT) (n=20) vs. No therapy (n=20) <u>Treatment details:</u> 60-minutes/session, 3 times/week for 8 weeks. <i>MMT:</i> 3 stages: (i) preparatory stage (stretching exercises to a quiet meditational music for 20 minutes); (ii) main stage (singing alone while seated in wheelchair, movements of unaffected side using musical instruments</p>	<p>At 8 weeks (post-treatment): (+) Range of motion (ROM) – affected shoulder flexion (+) ROM – affected elbow flexion (+) ROM – affected hip flexion (-) ROM – affected wrist (-) ROM – affected knee (-) Medical Research Council (MRC) Scale – affected upper arm strength</p>

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		such as tambourines and maracas for 30 minutes); and (iii) finishing stage (verbal expressions and feedback regarding the treatment sessions for 10 minutes). Both groups also received standard care comprised of intensity/frequency/duration not specified.	(-) MRC Scale – affected lower leg strength (-) Korean - modified Barthel Index (+) Korean version of the Profile of Mood States Brief instrument (-) Center for Epidemiologic Studies Depression Scale
Kim et al., 2012 PEDro score: 5 Country: Republic of Korea	20 patients with subacute/chronic stroke	Rhythmic auditory stimulation (RAS) gait training + conventional gait training (n=10) vs. Conventional physical therapy (n=10) <u>Treatment details:</u> 30 minutes/session, 3 times/week for 5 weeks. <i>RAS gait training:</i> performing various transfers and walking activities using a smartphone metronome application. <i>Conventional physical therapy:</i> based on neurodevelopmental exercises.	At 5 weeks (post-treatment): (+) Activities Specific Balance Scale (+) Dynamic Gait Index (-) Four Square Step Test (-) Functional Ambulation Category (+) Timed Up and Go Test (-) Up stairs (sec) (-) Down stairs (sec) (+) GAITRite - Velocity (+) GAITRite - Cadence (-) GAITRite - Stride length (affected/non-affected side) (-) GAITRite - Cycle time (affected/non-affected side)
Paul & Ramsey, 1998 PEDro score: 5 Country: USA	20 patients with subacute/chronic stroke	Electronic music making training (n=10) vs. Therapeutic recreation (n=10) <u>Treatment details:</u> 30-minutes/session, 2 times/week for 10 weeks <i>Electronic music making training:</i> provided in group sessions by music and occupational therapists and	At 10 weeks (post-treatment): (-) Range of motion (ROM) – shoulder flexion (-) ROM – elbow extension

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		<p>consisted of executing UE movements of shoulder flexion and elbow extension while playing electronic drums.</p> <p><i>Physical UE exercises training:</i> provided by the recreational therapist and consisted of encouraging participants to move their UE in various directions and positions.</p>	
<p>Purdie et al., 1997 PEDro score: N/A (quasi-experimental design) Country: Scotland</p>	<p>40 patients with chronic stroke</p>	<p>Individual music therapy sessions vs. No music therapy (Note: The number of participants in each group not stated)</p> <p><u>Treatment details:</u> 30-40 minutes/session, 1/week for 12 weeks. <i>Individual music therapy:</i> participants were encouraged to play a range of percussion instruments or synthesizer and/or participate vocally with the music therapist. Both groups received standard nursing care.</p>	<p>At 12 weeks (post-treatment): (-) Frenchay Aphasia Screening Test (-) Hospital Anxiety and Depression Scale (-) Musical Behaviour Rating Scale (+) Behaviour Rating Scale - emotional stability and spontaneous interaction subscales Note: Authors state that outcomes were measured at 6 weeks (mid-treatment); however, no clear results were provided for that time point.</p>
<p>Raghavan et al., 2016 PEDro score: N/A (quasi experimental study design) Country: USA</p>	<p>16 patients with chronic stroke</p>	<p>Music upper limb therapy – integrated training (MULT-I) (n=16)</p> <p><u>Treatment details:</u> 45 minutes/session, 2 times/week for 6 weeks. <i>MULT-I:</i> provided by a music therapist and occupational therapist and consisted of playing a variety of instruments (e.g. drums, bells, shakers, mallets, chimes, piano, harp) with the affected upper limb to encourage distal and proximal upper limb movements; with attention to positioning and movement quality.</p>	<p>At 6 weeks (post-treatment): (+) Fugl-Meyer Assessment – Upper Extremity (+) Two-Point Discrimination Test (+) Modified Rankin Scale (+) World Health Organization Well-Being Index (-) Stroke Impact Scale (SIS) – activities of daily living (-) SIS – participation (-) Kinematic data during wrist flexion/extension</p>

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			<p>At 1-year follow-up: (+) Fugl-Meyer Assessment – Upper Extremity* (+) Two-Point Discrimination Test* (+) Modified Rankin Scale* (+) World Health Organization Well-Being Index* (+) SIS – activities of daily living (-) SIS – participation *significant improvements refer to changes from baseline to follow-up.</p>
Raglio et al., 2016 PEDro score: 5 Country: Italy	20 patients with chronic stroke	<p>Music therapy (MT) + Speech and Language Therapy (SLT) (n=10) vs. SLT alone (n=10) <u>Treatment details:</u> 30-minutes/session, 2 times/week for 15 weeks. <i>Music therapy:</i> playing a rhythmic-melodic instrument (e.g. percussions, glockenspiels, xylophones, etc.) and to sing/vocalize together with the music therapist. <i>SLT:</i> provided using the communicative-pragmatic approach for speech therapy that involves the use of non-verbal expressions. SLT was provided to both groups for 45-minute sessions, 2 times/week for 15 weeks.</p>	<p>At 15 weeks (post-treatment): (-) Token Test (-) Boston Naming Test (-) Aachen Aphasia Test (AAT) – Picture description (-) AAT – Spontaneous speech (-) Beck Depression Inventory (-) Big Five Observer (BFO) – Energy/extroversion (-) BFO – Friendship (-) BFO – Diligence (-) BFO – Emotional stability (-) BFO – Open mindedness (-) Short-Form 36 (SF-36) – General health (-) SF-36 – Physical health (-) SF-36 – Mental health (-) SF-36 – Physical activity (-) SF-36 – Social activity</p>

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			(-) SF-36 – Physical pain (-) SF-36 – Vitality
Sarkamo et al., 2008 PEDro score: 6 Country: Finland	60 patients with acute stroke	Music group (n=20) vs. Audio book group (n=20) vs. No treatment (n=20) <u>Treatment details:</u> Minimum 1 hour/day, 7 days/week for 2 months. <i>Music and audio book groups:</i> listened daily to self-selected music or audio books respectively. All groups received <i>conventional rehabilitation</i> , which included physical, occupational and/or speech therapy and neuropsychological rehabilitation.	At 3 months post-stroke: <i>Music group vs. no treatment</i> (-) Rivermead Behavioral Memory Test (RBMT) – story recall subtest + auditory list-learning (-) Weschsler Memory Scale – Revised (WMS-R) – digit span subtest + memory interference (-) Finnish version of the Boston Diagnostic Aphasia Examination (F-BDAE) – word repetition, sentence repetition, reading (-) CERAD battery – verbal fluency, naming (-) Token Test (-) Clock Drawing Test (-) Figure Copying Test (-) Benton Visual Retention Test (BVRT) – short version (-) Balloons Test – subtest B (-) Montreal Battery of Evaluation of Amusia (MBEA) – scale, rhythm (-) Frontal Assessment Battery (FAB) (-) CogniSpeed reaction time software (+) Mental subtraction and Stroop subtests (-) Vigilance and reaction time (+) Shortened Finnish version of the Profile of Mood States (F-POMS short) (depression score only) (-) Stroke and Aphasia Quality of Life Scale – 39 (SAQOL-39)

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			<p><i>Audio book group vs. no treatment</i></p> <p>(-) RBMT – story recall subtest + auditory list-learning task</p> <p>(-) WMS-R – digit span subtest + memory interference task</p> <p>(-) F-BDAE – word and sentence repetition and reading subtests</p> <p>(-) CERAD battery – verbal fluency and naming subtests</p> <p>(-) Token Test</p> <p>(-) Clock Drawing Test</p> <p>(-) Figure Copying Test</p> <p>(-) BVRT-short</p> <p>(-) Balloons Test – subtest B</p> <p>(-) Frontal Assessment Battery</p> <p>(-) CogniSpeed reaction time software</p> <p>(-) Mental subtraction and Stroop subtests</p> <p>(-) Vigilance and reaction time subtests</p> <p>(-) F-POMS short</p> <p>(-) SAQOL-39</p> <p><i>Music group vs. Audio book group</i></p> <p>(+) RBMT – story recall subtest + auditory list-learning task</p> <p>(-) WMS-R – digit span subtest + memory interference task</p> <p>(-) F-BDAE – word and sentence repetition and reading subtests</p> <p>(-) CERAD battery – verbal fluency and naming subtests</p> <p>(-) Token Test</p>

Author, Year PEDro Score, Country	Sample size	Intervention	Outcome and significance: (+) significant (-) not significant
			(-) Clock Drawing Test (-) Figure Copying Test (-) BVRT-short (-) Balloons Test – subtest B (-) Frontal Assessment Battery (-) CogniSpeed reaction time software (-) Mental subtraction and Stroop subtests (-) Vigilance and reaction time subtests (-) F-POMS short (-) SAQOL-39 At 6 months post-stroke: <i>Music group vs. no treatment</i> (-) RBMT – story recall subtest + auditory list-learning task (-) WMS-R – digit span subtest + memory interference task (-) F-BDAE – word and sentence repetition and reading subtests (-) CERAD battery – verbal fluency and naming subtests (-) Token Test (-) Clock Drawing Test (-) Figure Copying Test (-) BVRT-short (-) Balloons Test – subtest B (-) Frontal Assessment Battery (-) CogniSpeed reaction time software (+) Mental subtraction and Stroop subtests (-) Vigilance and reaction time subtests

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			(-) F-POMS short (-) SAQOL-39 <i>Audio book group vs. no treatment</i> (-) RBMT – story recall subtest + auditory list-learning task (-) WMS-R – digit span subtest + memory interference task (-) F-BDAE – word and sentence repetition and reading subtests (-) CERAD battery – verbal fluency and naming subtests (-) Token Test (-) Clock Drawing Test (-) Figure Copying Test (-) BVRT-short (-) Balloons Test – subtest B (-) Frontal Assessment Battery (-) CogniSpeed reaction time software (-) Mental subtraction and Stroop subtests (-) Vigilance and reaction time subtests (-) F-POMS short (-) SAQOL-39 <i>Music group vs. Audio book group</i> (+) RBMT – story recall subtest + auditory list-learning task (-) WMS-R – digit span subtest + memory interference task (-) F-BDAE – word and sentence repetition and reading subtests (-) CERAD battery – verbal fluency and naming

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			subtests (-) Token Test (-) Clock Drawing Test (-) Figure Copying Test (-) BVRT-short (-) Balloons Test – subtest B (-) Frontal Assessment Battery (-) CogniSpeed reaction time software (+) Mental subtraction and Stroop subtests* (-) Vigilance and reaction time subtests (-) F-POMS short (-) SAQOL-39
Sarkamo et al., 2010 (secondary analysis of Sarkamo et al., 2008 study) PEDro score: 6 Country: Finland	60 patients with acute stroke.	Music group (n=20) vs. Audio book group (n=20) vs. No treatment (n=20) <u>Treatment details:</u> Minimum 1 hour/day, 7 days/week for 2 months. <i>Music and audio book groups:</i> listened daily to self- selected music or audio books respectively. All groups received <i>conventional rehabilitation</i> , which included physical, occupational and/or speech therapy and neuropsychological rehabilitation.	At 3 months post-stroke: <i>Music group vs. no treatment</i> (-) Frequency MMNm (-) Duration MMNm <i>Audio book group vs. no treatment</i> (-) Frequency MMNm (-) Duration MMNm <i>Music group vs. Audio book group</i> (-) Frequency MMNm (-) Duration MMNm At 6 months post-stroke: <i>Music group vs. no treatment</i> (+) Frequency MMNm*(-) Duration MMNm <i>Audio book group vs. no treatment</i> (+) Frequency MMNm* (+) Duration MMNm**

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			<p><i>Music group vs. Audio book group</i></p> <p>(-) Frequency MMNm (-) Duration MMNm Right hemisphere response – left lesion and right lesion ** Right hemisphere response – right lesion only Note: MMNm is referred to magnetic MMN response to change in sound frequency and duration (i.e. auditory sensory memory).</p>
<p>Schauer & Mauritz, 2003 PEDro score: 4 Country : Germany</p>	<p>23 patients with subacute/chronic stroke</p>	<p>Gait therapy with musical motor feedback (MMF) (n=11) vs. Conventional gait therapy (n=12) <u>Treatment details:</u> 20-minutes/session, 5 times/week for 3 weeks. <i>Gait therapy with MMF:</i> sensor insoles that detect the ground contact of the heels with a connected portable music player. The music was played (through headphones) at an adjustable speed, which was estimated from the time interval between two consecutive heel-strikes. <i>Conventional gait therapy:</i> warming up, slow walking with support of parallel bars, stepping sideways and backwards, etc. Exercises were led by a therapist. Conventional gait therapy was provided for 45 minutes/session, 5 days/week for 3 weeks.</p>	<p>At 3 weeks (post-treatment): (-) Walking speed (-) Stride length (-) Gait cadence (-) Gait symmetry deviation (-) Rollover path length (i.e. heel-on-toe-off distance) Note: no between-group statistical analyses were performed. The treatment group demonstrated significant improvements in all measures except gait cadence, whereas the control group demonstrated a significant gain in gait cadence only.</p>

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Schneider et al., 2007 PEDro score: 5 Country: Germany	40 patients with subacute stroke	Music training (n=20) vs. No music training (n=20) <u>Treatment details:</u> 30 minutes/session, 5 times/week for 3 weeks. MST: individual sessions, using MIDI-piano and/or an electronic drum set with progressing level of difficulty. Both groups received <i>conventional rehabilitation</i> : physical and occupational therapy; all participants received conventional rehabilitation for 60-minute sessions (30 mins each), 5 times/week for 3 weeks.	At 3 weeks (post-treatment): (+) Computerized movement analysis (tapping frequency, inversions of velocity and maximal angular velocity) of both finger tapping and hand tapping (+) Action Research Arm Test (+) Arm Paresis Score (+) Box and Block Test (+) Nine Hole Peg Test
Street et al., 2017 PEDro score: 7 (cross-over design) Country: UK	11 patients with subacute/chronic stroke	Therapeutic instrumental music performance (n=6) vs. No treatment (waiting list) (n=5) <u>Treatment details:</u> 20-30 minutes/session, 2 times/week for 6 weeks. <i>Therapeutic instrumental music performance</i> : playing acoustic musical instruments and/or iPads with touchscreen musical instruments as part of fine/distal exercise. Participants in the control group crossed-over to receive the 6-week intervention at 8 weeks (includes 6-week waiting period + 2-week washout period).	At 6 weeks (post-treatment): (-) Action Research Arm Test (-) Nine Hole Peg Test
Suh et al., 2014 PEDro score: 6 Country: Republic of Korea	16 patients with acute/subacute/chronic stroke	Rhythmic auditory stimulation (RAS) gait training (n=8) vs. Gait training without RAS (n=8) <u>Treatment details:</u> 15-minutes/session, 5 times/week for 3 weeks.	At 3 weeks (post-treatment): <i>Scores at post-treatment:</i> (-) Cadence (-) Velocity (-) Stride length

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		<p><i>RAS gait training</i>: provided using digital Musical Instrument Digital Interface (MIDI) software, where the participant was encouraged to walk to the rhythm cue provided. The training included 4 steps: (1) 5-min warm up, 3-min rest, 10-min independent walking without rhythm cue; (2) 2-min rest, 1-min toe tapping, 10-min walk with the rhythm cue provided in the temp of the participants' cadence; (3-4) cadence was provided with an increase of 5% and 10% for each step.</p> <p><i>NDT/Bobath training</i>: 30 minutes/session, 5 times/week for 3 weeks and included therapeutic handling, facilitation, inhibition, key points of control.</p>	<p>(+) Overall Stability Index – standing balance (+) Anteriorposterior Index – standing balance (+) Mediolateral Index – standing balance <i>Change scores from baseline to post-treatment:</i> (-) Cadence (+) Velocity (-) Stride length (+) Overall Stability Index – standing balance (+) Anteriorposterior Index – standing balance (+) Mediolateral Index – standing balance</p>
<p>Thaut et al., 1997 PEDro score: 4 Country: USA</p>	<p>20 patients with acute stroke.</p>	<p>Rhythmic Auditory Stimulation (RAS) + conventional physical therapy (n=10) vs. Conventional physical therapy (n=10)</p> <p><i>Treatment details:</i> 30-minutes/session, 2 times/day, 5 days/week for 6 weeks.</p> <p><i>RAS training</i>: walking using a metronome or specifically prepared music tapes, where the rhythm frequency was matched to the gait cadence for the first quarter of the sessions, and incrementally increased by 5 to 10% for the second and third quarter. The last quarter was spent with RAS intermittently faded.</p> <p><i>Conventional physical therapy</i>: based on the Neurodevelopmental Treatment (NDT) approach and trained the same amount of time and distance with</p>	<p>At 6 weeks (post-treatment): (+) Velocity (+) Stride length (-) Stride symmetry (-) Step cadence (+) EMG amplitude of gastrocnemius muscle (paretic side)</p>

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		equivalent instructions regarding speed improvement, without RAS facilitation.	
Thaut et al., 2007 PEDro score: 7 Country: USA	78 patients with acute/subacute stroke	<p>Rhythmic Auditory Stimulation (RAS) gait training (n=43) vs. Neurodevelopmental therapy (NDT) gait training (n=35)</p> <p><i>Treatment details:</i> 30-minutes/session, 5 days/week for 3 weeks. <i>RAS training:</i> walking using a metronome or specifically prepared music tapes, where the rhythm frequency was matched to the gait cadence for the first quarter of the sessions, and increased by 5% for the second quarter. During third quarter, adapted gait patterns were practices. The last quarter was spent with RAS intermittently faded. <i>NDT gait training:</i> based on the Neurodevelopmental Treatment (NDT)/Bobath approach and trained the same amount of time and distance with equivalent instructions regarding speed improvement, without RAS facilitation.</p>	<p>At 3 weeks (post-treatment): (+) Gait velocity (+) Stride length (+) Gait cadence (+) Gait symmetry</p>
Tong et al., 2015 PEDro score: 5 Country: China	33 patients with acute/subacute/chronic stroke	<p>Music-supported training (n=15) vs. Muted music-supported training (n=18)</p> <p><i>Treatment details:</i> 20 x 30-minute sessions over 4 weeks. <i>Music-supported training:</i> included the use of two musical audible instruments (aluminum sheet lyre and wooden percussion instrument) to play music pieces. <i>Muted music-supported training:</i> included musical instruments resembling those of music training, but made</p>	<p>At 4 weeks (post-treatment): (-) Fugl-Meyer Assessment – Upper Extremity subscale (+) Wolf Motor Function Test – Quality (+) Wolf Motor Function Test – Performance Time</p>

Author, Year PEDro Score, Country	Sample size	Intervention	Outcome and significance: (+) significant (-) not significant
<p>van Delden et al., 2013 PEDro score: 6 Country: Netherlands</p>	<p>60 patients with acute/subacute stroke</p>	<p>of sponge (i.e. inhibiting participants to hear sounds during training). Both groups received <i>conventional rehabilitation</i> for 45-minutes/session (frequency not specified), that included physical, occupational and other motor therapies.</p> <p>Modified bilateral arm training with rhythmic auditory cueing (mBATRAC) (n=19) vs. Modified constraint-induced movement therapy (mCIMT) (n=22) vs. Conventional rehabilitation (CR) (n=19)</p> <p><u>Treatment details:</u> 60-minutes/session, 3 times/week for 6 weeks. <i>mBATRAC</i>: rhythmic flexion and extension movements of the wrist and use of metronome. <i>mCIMT</i>: repetitive task practices and shaping of the desired movements with an emphasis on the increase of control of the wrist and finger extensors and wearing the mitt on the nonparetic hand for 6 hours each day. <i>CR</i>: upper limb rehabilitation exercises.</p>	<p>At 6 weeks (post-treatment): (-) Acton Research Arm Test (ARAT) (-) Motricity Index (MI) (-) Fugl-Meyer Assessment – Upper Extremity (FMA-UE) (-) Nine Hole Peg Test (NHPT) (-) Erasmus modification of the Nottingham Sensory Assessment (EmNSA) (-) Motor Activity Log - Amount of Use (MAL-AOU) (-) Motor Activity Log – Quality of Movement (MAL-QOM) (-) Stroke Impact Scale (SIS) – Strength (-) SIS – Memory (-) SIS – Emotion (-) SIS – Communication (-) SIS – ADL (-) SIS – Mobility (-) SIS – Hand Function (-) SIS – Social Participation</p> <p>At 12 weeks (follow-up): (-) ARAT (-) MI (-) FMA-UE</p>

Author, Year PEDro Score, Country	Sample size	Intervention	Outcome and significance: (+) significant (-) not significant
<p>van Der Meulen et al., 2016 PEDro score: 8 (cross-over design) Country: Netherlands</p>	<p>17 patients with chronic stroke with aphasia</p>	<p>Melodic intonation therapy (MIT) (n=10) vs. No treatment (n=7) <u>Treatment details:</u> 5 hours/week for 6 weeks (3 hours/week face-to-face treatment with therapist + 2 hours/week treatment at home using iPod application). MIT: several levels with increasing difficulty, where for each utterance, a melodically intoned pattern was developed with the therapist, while hand tapping the rhythm of the utterance. Participants in the control group received no treatment for the first 6 weeks, then crossed over to receive MIT for 6 weeks.</p>	<p>(-) NHPT (-) EmNSA (-) MAL-AOU (-) MAL-QOM (+) SIS – Strength* (-) SIS – Memory (+) SIS – Emotion* (-) SIS – Communication (-) SIS – ADL (-) SIS – Mobility (-) SIS – Hand Function (-) SIS – Social Participation *In favor of CR vs. mBATRAC</p> <p>At 6 weeks (post-treatment): (-) Sabadel story retell task (-) Amsterdam-Nijmegen Everyday Language Test (-) Aachen Aphasia Test – naming, repetition, auditory comprehension (+) MIT task – trained items (-) MIT task – untrained items</p> <p>At 12 weeks (follow-up): (-) Sabadel story retell task (-) Amsterdam-Nijmegen Everyday Language Test (-) Aachen Aphasia Test – naming, repetition, auditory comprehension (-) MIT task – trained items* (-) MIT task – untrained items</p>

Music Therapy

Author, Year PEDro Score, Country	Sample size	Intervention	Outcome and significance: (+) significant (-) not significant
Villeneuve et al., 2014 PEDro score: N/A (quasi-experimental AABA design study) Country: Canada	13 patients with chronic stroke	Music-supported therapy (MST) (n=13) <u>Treatment details:</u> 60-minute sessions, 3 times/week for 3 weeks of face-to-face MST + 30-minutes/session, 2 times/week for 6 weeks oh home based exercises. MST: individual face-to-face sessions of playing musical pieces involving all 5 digits of the affected hand, increasing in difficulty in terms of level (consecutive, intervals, accords) and speed (20 – 60bpm). A piano keyboard with use of Synthesia™ software was employed. Home based exercises were performed using a roll-up flexible piano where similar musical pieces were practices that involved all the 5 digits of the affected hand.	Participants in the MIT group performed significantly worse on this task at follow-up vs. post-treatment. Note: no significant improvements nor between-group differences were noted when the control group crossed-over to receive the intervention. At 3 weeks (post-treatment): (+) Box and Block Test (BBT)* (+) Nine Hole Peg Test (NHPT)* (+) Jebsen Hand Function Test (JHFT)* (+) Finger to Nose Test (FTN)* (+) Finger Tapping Test (FTT)* At 6 weeks (follow-up): (-) BBT** (-) NHPT** (-) JHFT** (-) FTN** (-) FTT** Significant improvements from baseline to post-treatment. ** Changes from post-treatment to follow-up.