Question 29 evidence tables

Question 29: Does functional electrical stimulation to the lower limb improve outcomes after stroke?

NB Any discrepancies between reviewers in evidence quality and comment were discussed at the corresponding evidence review meeting

FES = functional electrical stimulation, ARAT = action research arm test, TENS = Trancutaneous Electrical Nerve Stimulation, NMES = Neuromuscular Electrical Stimulation, FES = Functional Electrical Stimulation, AFO = ankle-foot orthosis, tDCS = Transcranial Direct Current Stimulation, TEAS = Transcutaneous Electrical Acupoint Stimulation, ES = electrical stimulation, VAS = Visual Analog Scale, SDQ = Shoulder Disability Questionnaire, MEP = motor evoked potential, TEMPA =Test d'Evaluation des Membres Superieurs des Personnes Agees, FMA = Fugl Myer Assessment Scale, MAL = Motor activity log, WMFT = Wolf Motor function Test, 9HPT = 9-hole peg test, B&BT = Box and block test, MAS = Modified Ashworth scale, UL = upper limb, 6MWT = 6 minute walk test, SR = systematic review, MA = meta-analysis, RCT = randomised controlled trial, IPDMA = individual patient data meta-analysis, MDT = multidisciplinary team, PICO = patient/population, intervention, comparison and outcomes, OR = odds ratio, CI = confidence interval, QoL = quality of life, ADL = activities of daily living, OR = odds ratio, RR = relative risk, aOR = adjusted odds ratio, cOR = crude odds ratio, CI = confidence interval, RoB = risk of bias, I2 = heterogeneity statistic.

Ref ID	Source	Setting, design and subjects	Intervention	Outcomes	Results	Evidence quality (SIGN checklist score) and comment
68	H. Busk et al. (2019). Electrical Stimulation in Lower Limb During Exercise to Improve Gait Speed and Functional Motor Ability 6 Months Poststroke. A Review with Meta-Analysis. *Journal of Stroke and Cerebrovascular Diseases,* : 104565	Meta-analysis - Controlled trials with randomisation or quasi-random allocation at least two groups with or without blinding. Analysing - Gait speed and functional gait ability in patients within 6 months post stroke.	Constant or intermittent peripheral ES applied with external electrodes at the motor point of the muscle or at the muscle belly to help produce at muscle contraction.	Any measures of activities of daily living and gait speed.	Eight trials including 191 participants. Mean age of participants was 61 (range 51-67) Very wide variation in the stimulation parameters - frequency: 20-100 Hz, pulse duration:0.18-450 ms, intensity between12 and 50 mA. Five trials assessed FES exercise versus exercise on gait speed with significant mean difference between groups of 0.15m/s (95%CI=0.08 to 0.21). Three papers assessed change in Barthel score but no significant difference was identified with mean diffference of 2.9 (95%CI=-3.3	**++** This was a high quality paper but there were some missing details. The search terms are not provided however there was clearly a comprehensive literature search. The 22 excluded papers are not referenced.

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					to 9.1). Three papers pooled results of Berg balance score and again, there was no significnat difference between groups with mean difference of 1.73 (95%CI=-2.8 to 6.3).	
69	K. Hachisuka et al. (2021). Clinical effectiveness of peroneal nerve functional electrical stimulation in chronic stroke patients with hemiplegia (PLEASURE): A multicentre, prospective, randomised controlled trial. *Clinical rehabilitation,* 35(3): 367-377	Setting - Multi-centre in-patient. 23 hospitals in Japan. Design - Randomised controlled trial - open-label. Subjects - 119 participants who were at least four months post stroke with paresis in theleg but ability to walk on level ground.	Novel FES device for drop-foot used in the treatment group in the 260 minute phase of the treatment phase. Participants completed 480 hours of self-training over four weeks followed by 260 minutes of physiotherapy assisted training for gait with ot without the FES device.	Primary measure - 6 minute walk test without device. Secondary measures - 10 metre walk test without device. FMA, Strength, Stroke impact scale, passive range of motion and modified Ashworth Scale.	No significant differences between groups identified in any outcome measure. Mean differences in change between baseline and immediately post treatments calculated from table. 6 minute walk test - Mean difference between groups was 7.5 metres in favour of control group. Mean difference in 10m walk test was 0.01m/s in favour of control group. Mean difference in FMA - lower extremity score was 0.3 in favour of treatment group.	**+** Study was not blinded. Concern about multi-centre study with 23 hospitals recruiting only 119 patients - mean of 5 participants per recruitment site.
70	Z. Hong et al. (2018). Effectiveness of Neuromuscular Electrical Stimulation on Lower Limbs of Patients With Hemiplegia After Chronic Stroke: A Systematic Review. *Archives of Physical Medicine and Rehabilitation,* 99(5): 1011-1022.e1	Meta-analysis - Randomised controlled trials Analysing - Lower limb motor function in patients post stroke	Neuro muscular electical stimulation (NMES) alone or combined, compared to other interventions with a control group of no electircal stimulation treatment.	Primary outcome measure measured motor function [If more than 1 measure was used in an individual trial, gait analysis (GA) was considered as a priority outcome measure because it is more appropriate to reflect lower extremity activity recovery] otherwise gait speed or lower limb assessment scales were used.	21 trials with 23 comparison groups including 1481 participants. The mean time of intervention was 12.86 weeks (range 3 to 52 weeks) The study only reports that stimulation frequency 15Hz to 100 Hz but no other parameters. 11 studies assessed FES, two studies assessed NMES, two studies assessed TENS, two studies assessed peroneal nerve stimulation and two were unspecified electircal	**+** Methods for combining individual study data was not appropriate. See results regarding inconsistent use of measures for gait speed. It was also unclear what gait analysis actually meant as this appeared to be quantiative but was not described.

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					stimulation. Primary outcome measure - Pooled analysis of 23 comparisons indicated a statistically significant improvement in teh lower extremity motor function with NMES compared to control groups. SMD=0.42 (95%CI=0.26 to 0.58) Secondary outcome measures - Gait speed was measured in 16 trials but this analysis expressed as SMD due to "inconsistent units of measurement" and indicated SMD=0.41 (95%CI=0.22 to 0.61) Berg balance indicated a significnat improvement of 3.2 (95%CI=1.3 to 5.0) Timed up and go indicated a significant improvement of 2.3 seconds (95%CI=4.3 to 1.6). 6MWT indicated no significant difference between the groups.	
70	Z. Hong et al. (2018). Effectiveness of Neuromuscular Electrical Stimulation on Lower Limbs of Patients With Hemiplegia After Chronic Stroke: A Systematic Review. *Archives of Physical Medicine and Rehabilitation,* 99(5): 1011-1022.e1	Systematic Review: 21 RCTs included, n=1481, chronic stroke survivors (onset > 6mths) with lower limb dysfunction,	NMES with or without other interventions in improving lower limb activity after chronic stroke. Other interventions included physio, TT, BWSTT,	Primary: lower limb motor function which consisted of gait speed, walking distance and motor function assessment scales. Secondary: gait speed, balance (BBS, TUG), spasticity and ROM, Walking enducrance - 6MWT	Significant effect found - NMES combined with other treatment techniques in improving lower extremity motor function compared with a control group in chronic stroke. Nonsignificant improvement in motor function when NMES alone was applied. Secondary outcomes: NMES resulted in significant increases in gait speed, BBS,	+ Acceptable SMD used for primary outcome because of range of measures used but this does not express NMES benefits in real terms Significant evidence of publication bias

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					ROM and reductrions in TUG and MAS but nonsignificant increase in 6MWT	
71	M. Jaqueline da Cunha et al. (2021). Functional electrical stimulation of the peroneal nerve improves post-stroke gait speed when combined with physiotherapy. A systematic review and meta-analysis. *Ann Phys Rehabil Med,* 64:1 101388	Systematic Review and meta-analyses including 14 studies and 1115 participants, Mean age 45 - 72 yrs, mean time since stroke ranged from < 1- 108 months	RCTs or crossover trials on the effects of FES applied to the paretic peroneal nerve of post-stroke individuals with foot drop.	primary outcome gait speed(10MWT), 2ry active ankle dorsiflexion mobility, BBS, TUG	median PEDro score was 5 (range 4 to 7). FES did not enhance gait speed as compared with conventional treatment [SMD = 0.092 (95% CI: 0.34 to 0.53; I2 89%, P = 0.68)] A sensitivity analysis showed that FES combined with physiotherapy could increase gait speed as compared with physiotherapy alone (n = 133) [SMD = 0.51 (95% CI: 0.16 to 0.86; I2 0%, P = 0.0042)]. FES could improve active ankle dorsiflexion, BBS & TUG as compared with conventional treatment	+ Acceptable Included studies fair quality and high risk of bias. Unclear who extracted data (If >1)
72	T. E. Johnston et al. (2021). A Clinical Practice Guideline for the Use of Ankle-Foot Orthoses and Functional Electrical Stimulation Post-Stroke. *Journal of neurologic physical therapy : JNPT,* 45(2): 112-196	Setting : Hospital and community . Design: Clinical Practice Guideline : 122 studies including meta analyis, SRs, RCTs,cohort studies and case control studies. Literature searches performed from May 2017 to November 2019.Eight action statements developed and presented according to ICF domains of participation, activity and body structure and function. Each action statement is assigned a	Functional Electrical Stimulation (surface electrodes & implanted FES) & AFOs(prefabricated, custom, articulating, ground reaction,solid , rigid, semirigod and flexible)	Participation outcomes: Quality of life as measured by Stroke Impact Scale , Stroke Specific Qulaity of life (SSQOL) & Sickness Impact Profile : Activity outcomes:Gait speed , measured by 10m walk test; Other mobility measured by Functional Ambulation Category (FAC) and modified	Strong evidence to support provision of AFO or FES to improve gait speed, mobility and balance in acute and chronic stroke and for endurance in chronic stroke . Moderate evidence for quality of life . AFO or FES is not recommended for plantarflexion spastcity.	++ Evidence Quality : Comprehensive indepth guideline

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		level of evidence and strenth of recommendation. Subjects: Aged 18 years and older with stroke acute and chronic.		Ambulation Profile ; Dynamic Balance measured by Berg Balance Scale , Timed Up and Go and Timed Up and Down stairs; Endurance measurd by 6min walk test and Physiologic Cost Index , Body Structure and Function Outcomes : Spasticity measured by Modified Ashworth Scale . Muscle Activation mesaured by EMG ; gait kinematics mesaured by kinematics .		
72	T. E. Johnston et al. (2021). A Clinical Practice Guideline for the Use of Ankle-Foot Orthoses and Functional Electrical Stimulation Post-Stroke. *Journal of neurologic physical therapy : JNPT,* 45(2): 112-196	Setting- Inpatient and community based care Participants: Individuals with decreased lower extremity motor control (motor related impairments) that impact body function and structure, activity, and participation post-stroke, in both the acute or chronic stages . Design Systematic review within clinical practice guideline development Searches for systematic reviews, meta-analyses, RCTs and cohort studies involving stroke and AFO or FES up to November 2019 in 7 databases. Data extracted included time post-stroke, participant characteristics, device types, outcomes assessed, and intervention parameters. Recommendations were	Functional electrical stimulation and Ankle foot orthosis in acute and chronic stroke	Outcomes are considerd using the ICF. Particpation - QoL: Activties - gait speed; mobiity; walking endurance; balance (includes falls and fear of falling): Impairments - spastcity; muscle activiation and kinematics (proxy measures of weakness).	122 meta-analyses, systematic reviews, randomized controlled trials, and cohort studies were included.Overall: Both FES and AFOs were found have equivilent effects nad effectivenss, detailed below Participation: There was moderate evidence that either an AFO or FES could improve QoL Activity: There was strong evidence that an AFO or FES could improve gait speed (a proxy measure of walking activity); walking endurance (which contributes to outdoor mobility/ community participation, and dose of practice during treatment (steps/session or steps per day); balance; and other	**++** This is a super-thorough, high quality clinical practice guideline (see design section). It goes beyond the systematic review methods considered in SIGN but would be

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		determined on the basis of the strength of the evidence (as defined in the aAPTA Clinical Practice Guideline Process Manual, which is very similar to SIGN definitions) and also considered potential benefits, harm, risks, or costs of providing AFO or FES. In doing so, the authors considered the effects in acute and chronic stages of stroke; orthotic/compensatory and recovery effects; compared AFOs and FES; compared both AFOS and FES to 'no device'; immediate and longer term effects;			aspects of mobility (walking on different surfaces, transfers, stairs) and reduce falls and fear of falling improving safety in both the home and community Impairments: There is moderate evidence that AFOs and FES improve muscle activation and weak evidence that they improve gait kinematics (both proxy measures of weakness). There is moderate level evidence that neither AFO nor FES decreases plantarflexor spasticity. There is moderate level evidence at clinicians should provide • a lightweight flexible AFO for individuals (with acute or chronic stroke) with dorsiflexor (anterior tibialis) or plantarflexor (gastrocnemius/soleus) weakness while walking, as the flexible nature will allow some muscle activity if the patient is able. • FES for individuals with dorsiflexor (anterior tibialis) wekness. Implementation • Early use of an AFO or FES may promote faster improvements in mobility and safe mobilisation which may reduce length of stay and	

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					enable more independent exercise participation. Thus they should be considered during inpatient rehabilitation • Both FES and AFOs reduce risk of falls, and improve patients' confidence and safety in both the home and community. • FES may be a better choice than AFOs for individuals walking at greater speeds. • In the chronic phase, AFOs and FES provide both compensation and recovery-based effects. Thus, individuals can make gains in mobility, balance and safety relative to their needs even years after the stroke, which may further increase QOL and participation • AFO use may be discontinued due to discomfort, difficulty donning/doffing, difficulty accommodating footwear or clothing. FES may be abandoned due to dislike of the stimulation, general dissatisfaction, and skin irritation. Thus careful fitting, training and opportunity for revisions are required.	
73	L. R. Nascimento et al. (2020). Ankle-foot orthoses and continuous functional	Design - Systematic reivew of parallel group RCTs with meta-analysis. Quality assessed using PEDro (for trials) scores and	ankle-foot orthoses (AFO) and functional electrical stimulation (FES) compared to	Walking speed (proxy measure of mobility/ walking acitvity) and blane	11 trials involving 1135 participants. Mean PEDro score was 5.8 (range 4- 7) - moderate quality, ranging	

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	electrical stimulation improve walking speed after stroke: a systematic review and meta-analyses of randomized controlled trials. *Physiotherapy,* 109: 43-53	GRADE (for strength of eivdience). Subjects - stroke survivors with foot drop/ dorsiflexor weakness who were albe to wlak	usual care or no treatment		poor to excellent. AFOs (MD 0.24 m/s; 95% CI 0.06 - 0.41) and FES (MD 0.09 m/s; 95% CI 0.03 to 0.14) significantly increased walking speed, compared with no intervention/placebo. Results regarding balance were inconclusive as there wa sinsufficnet data for meta-analyses. There was no diference in effect between AFO and FES on walking speed (MD 0.00 m/s; 95% CI -0.06 to 0.05) or balance (MD 0.27 points on the BergBalance Scale; 95% CI -0.85 to 1.39) after stroke. Overall Moderate evidence that AFOs and FES improve walking speed compared to no treatment/placebo or usual care. Insufficient data to assess balance. AFOs and FES are comparably effective.	
73	L. R. Nascimento et al. (2020). Ankle-foot orthoses and continuous functional electrical stimulation improve walking speed after stroke: a systematic review and meta-analyses of randomized controlled trials. *Physiotherapy,* 109: 43-53	Systematic review including only parallel, randomised trials examing effect of Ankle-Foot Orthosis and continuous Functional Electrical Stimulation on walking speed after stroke. Participants were ambulatory adults after stroke. Eleven trials involving 1135 participants were included.	The experimental interventions were the use of an ankle-foot orthosis or functional electrical stimulation.	Outcome data related to walking speed and balance	Both ankle-foot orthosis (walking speed increase by 0.24 m/s) and functional electrical stimulation (walking speed increase by 0.09 m/s) improved walking speed. There was no evidence to suggest either intervention improved balance.	**++** Good quality Systematic Review

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74	S. Prenton et al. (2016). Functional electrical stimulation versus ankle foot orthoses for foot-drop: A meta-analysis of orthotic effects. *J Rehabil Med,* 48:8 646-656	MA; 5 RCTs, 815 patients with foot drop after stroke	Functional Electrical Stimulation (n=407) or Ankle-Foot Orthoses (n=408)	Walking measures of impairment, activity and participation	AFO's have equally positive effects as FES on key walking measures	**++** Need for long term, high-quality RCTs highlighted
74	S. Prenton et al. (2016). Functional electrical stimulation versus ankle foot orthoses for foot-drop: A meta-analysis of orthotic effects. *J Rehabil Med,* 48:8 646-656	MA;5 RCTs published between 2007 & 2015 .One multiple site crossover design & four 2-arm parallel RCTs. 815 stroke participants , aged 18 years and over. Mean time since diagnosis 51.7 days up to 6.9 years	Use of Ankle Foot Orthoses(AFO) including customised & off-the shelf compared with Functional Electrivcal Stimulation (FES) and their effect on walking .Period studied from 6 weeks to 12months .	ICF activity domain measurements utilised.-10m walk test measured in all trials and functional exercise capacity in 3 trials . Time up and go and mobilty subscale of stroke impairment scale . Measured at overalpping time points 4-6 weeks, 12-13 weeks and 26-30 weeks :	No difference between 2 interventions identified. Both interventions demonstrate comparable improvement in 10m walking test, functional exercise capacity , timed up and go	**+** Evidence quality : Need to review this. . Detection bias;different FES devices and no specific FES settings, electrodes placing
75	S. Prenton et al. (2018). Functional electrical stimulation and ankle foot orthoses provide equivalent therapeutic effects on foot drop: A meta-analysis providing direction for future research. *J Rehabil Med,* 50:2 129-139	MA; 7 RCTs, 464 patients with foot drop due to stroke (n=450) or cerebral palsy (n=14)	Functional Electrical Stimulation (n=236) or Ankle-Foot Orthoses (n=228)	Gait speed, activity, EMG, kinematics	FES and AFO have equally positive therapeutic effect on walking speed	**++** Directions for future research provided
75	S. Prenton et al. (2018). Functional electrical stimulation	Meta-analysis: 7 RCTs included, n=464 (of these 14 had CP remainder were stroke), all	FES compared with AFO	Any measure that captured walking behaviours when a device	FES and AFO have an equally positive therapeutic effect on walking speed in non-	**++** High quality

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	and ankle foot orthoses provide equivalent therapeutic effects on foot drop: A meta-analysis providing direction for future research. *J Rehabil Med,* 50:2 129-139	participants had unilateral footdrop. Time since stroke varied from 13 days to 9 years so acute and chronic stroke pts included		was not being worn following a period of use were extracted (therapeutic effect). Those within the activity or participation of ICF as these capture actual performance. In order to evidence potential mechanisms of effect (qu 2) BFS - body functions and sturctures (impairments) were measures of interest. Therefore EMG and gait kinematics were chosen	progressive CNS diagnosis. The evidence does not show whether this translates into the users own environment and does not reveal the mehanisms that achieve that change.	
76	Y. H. Wang et al. (2016). Full-movement neuromuscular electrical stimulation improves plantar flexor spasticity and ankle active dorsiflexion in stroke patients: a randomized controlled study. *Clinical rehabilitation,* 30(6): 577-586	RCT; parallel group, single blind; 72 patients with sub-acute post-stroke hemiplegia and plantar flexor spasticity	Four groups; Conventional rehabilitation (CR) plus Neuromuscular electrical stimuation, either sensory threshold, motor threshold or full movement. Control group received CR only	Spasticity, active dorsiflexion, walking speed	Only the full-movement NMES group had a significant reduction in spasticity and improvement in active dorsiflexion. No significant difference in walking speed was found	- No reporting of conventional rehabilitation dose. No inferential statistics to compare patient characteristics for each group at baseline
76	Y. H. Wang et al. (2016). Full-movement neuromuscular electrical stimulation improves plantar flexor spasticity and ankle active dorsiflexion in stroke patients: a randomized	Prospective single blind RCT carried out in hospital setting ; N=72; post-acute stroke patients :-two weeks to six weeks from stroke onset.Randomised into four treatment groups :- conventional rehabilitation therapy,sensory threshold-neuromuscular electrical	Control group received conventional rehabilitation therapy .Other three groups received 30 mins sessions of neuromuscular stimulation twice a day, five days per	Composite Spasticity Scale , Ankle Active Dorsiflexion Score,Timed Up and Go Test performed pretreatment,post treatment and at two week follow up.	Full movement neuromuscular stimulation showed largest precentage reduction in Composite Spasticity Scale, and improvement in ankle active dorsiflexion compared with other 3 groups .	- Evidence quality: Limited detail of randomisation.Lack of information regarding nature and amount of coventional rehabilitation . ?Sensitivity / specificity of Composite Spasticity Scale

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	controlled study. *Clinical rehabilitation,* 30(6): 577-586	stimulation,motor threshold - neuromuscular electrical stimulation and full movement neuromuscular electrical stimulation.	week for four weeks.Delivered by surface electrodes on motor points of extensor hallucis and digitorum longus and fibular head.			
692	M. G. H. Kristensen et al. (2022). Neuromuscular Electrical Stimulation Improves Activities of Daily Living Post Stroke: A Systematic Review and Meta-analysis. *Archives of Rehabilitation Research and Clinical Translation* 4:1 100167	SR and MA of RCTs of effectiveness of neuromuscular electrical stimulation (NMES). No info about the controls except "the only difference between the control and intervention groups was administration of NMES" I. and (2) to investigate the influence of paresis and the timing of treatment. Data Sources: PubMed, MEDLINE, Embase, Physiotherapy Evidence Database (PEDro) and Cochrane Library up to May 2020. Two independent reviewers. Quality assessed using the PEDro scale and Cochrane Risk of Bias Tool.	NMES to the upper or lower limbs using surface electrodes that produced a visible muscle contraction. EMG-triggered ES or FES excluded. 13 trials stimulated the UL, mainly shoulder abductors and wrist extensors +/- other muscle groups eg wrist flexors, elbow extensors, +/or finger extensors +/or flexors. 7 trials stimulated the LL, mostly ankle dorsal flexors +/- hip and knee flexors and extensors, toe extensors, and ankle evertors. Intervention duration = 3 weeks to 3 months, most frequently stimulation sessions of 10-60 mins, 1-4 times daily, and 3-7 weekly for 3-4 weeks.	Activities of daily living (ADL) – primary and impairments/ activity (referred to as 'functional motor abilities'). ADL= Barthel Index Impairments'/activity = Action Research Activity Test; Box and block test and Motor Assessment Scale	20 selected; 13 ADL and 10 impairment/ activities in sub-acute and chronic stroke; n= 428 and 659 respectively. Mean PEDro score = 5.8 (range, 4-8) with 13 trials rated as good. NMES had a positive effect on ADL (SMD= 0.41; 95%CI 0.14-0.67; P=.003) in the subacute stage (SMD= 0.44 95%CI 0.09-0.78; P=.01) but not chronic stroke (SMD= 0.35 95%CI -0.14 to 0.84; P=.16). Severity of weakness was not a factor; both moderate (SMD=0.21 95%CI -0.16 to 0.58; P=.26; n=3) and severe (SMD= 0.36 95%CI -0.55 to 1.26; P=.44; n=3) subgroups showed non-significant effects.	Evidence level is good, but the number of trials and participants are small. The sub-group analyses are tiny. All should be treated with caution. However, indicates that NMES can improve ADL in sub-acute stroke. Non-significant differences for chronic stroke and impairment/activity Severity of weakness was not a factor.

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			Typical stimulation protocol = cyclic Stimulation, at frequency of 30 Hz (range 1.7-100Hz) with fixed pulse width (200-300 ms, range, 100-450ms). Amplitude generally individually adjusted to get a visible muscle contraction or joint movement			
694	Z. Mahmoudi et al. (2021). The Effects of Electrical Stimulation of Lower Extremity Muscles on Balance in Stroke Patients: A Systematic Review of Literatures. *Journal of Stroke and Cerebrovascular Diseases* 30:8 105793	SR and MA of RCTs of the effect of functional electrical stimulation (FES) Databases: Google Scholar, PubMed, Scopus, Science-Direct and ProQuest. Physiotherapy Evidence Database (PEDro) scale used to assess methodological quality. Stroke patients were in chronic phase (5 trials) and in subacute phase (n = 4 trials). Age ranged 20 to 80 years.	FES plus conventional therapy to the lower limbs compared to conventional therapy alone. 'Conventional therapy' described as therapeutic exercise, standard physiotherapy program, treadmill training, cycling. FES was applied to tibialis anterior, hamstring, quadriceps and/or gluteus medius. Intervention duration was most commonly 30 mins, 5x/week for 12 to 48 sessions. FES frequency most commonly 25 to 40 Hz.	Balance: Berg Balancce Scale and Timed Up and Go	9 trials selected (n=255). Median PEDro scale =7/11 i.e. moderate quality. Significant between-group improvement favouring FES plus conventional therapy in balance: Berg Balance Scale (7 trials) and balance/mobility: Timed Up and Go Scale (4 trials) compared to conventional therapy alone. No adverse effect reported by any studies.	There is moderate level evidence, albeit from a small number of trails (and thus probably under-powered), that FES plus conventional therapy can improve balance more than conventional therapy alone.