Action Statement 7:
ANKLE-FOOT ORTHOSIS (AFO) OR FUNCTIONAL ELECTRICAL STIMULATION (FES) TO IMPACT MUSCLE ACTIVATION

Action Statement	Clinicians ***MAY*** provide an AFO with decreased stiffness for individuals with decreased lower extremity motor control due to acute or chronic poststroke hemiplegia who have goals to allow activation of the anterior tibialis and gastrocnemius/soleus muscles while walking with an AFO. ● Evidence quality: II (acute)-III (chronic) ● Recommendation strength: moderate (acute) to weak (chronic) Clinicians ***SHOULD*** provide FES for individuals with decreased lower extremity motor control due chronic post-stroke hemiplegia who have goals to improve activation of the anterior tibialis muscle while walking without FES ● Evidence quality: no evidence (acute)-II (chronic) ● Recommendation strength: moderate (chronic)		
Outcome Measures	● Electromyography (EMG)		
Evidence Summary Acute AFO/FES (Level I= strongest level)	**CLINICAL EFFECTS**	**AFO**	**FES**
	Immediate Effect	Level III	N/A*
	Therapeutic Effect	Level II	No evidence
	Training Effect	No evidence	N/A*
	Combined Effect	No evidence	N/A*
Evidence Summary Chronis AFO/FES		**AFO**	**FES**
	Immediate Effect	Level III	N/A*
	Therapeutic Effect	No evidence	Level I
	Training Effect	No evidence	N/A*
	Combined Effect	No evidence	N/A*
AFO compared to FES	Acute: No evidence		Chronic: No evidence
Key Dose Considerations	● In the chronic phase FES increased anterior tibialis activation is noted in as little as 4-weeks, however, up to 24 weeks of training may be needed for effects. ● The amount of time per day or days per week the FES should be worn to produce this result is not clearly defined, however, most studies reported dosing as “daily”		
Clinical Application/ Interpretations	● Immediate and Therapeutic effects for increased muscle activation can be seen in AFOs that are less stiff ● Wearing an AFO does not appear to hinder muscle activation regardless of stiffness ● If the person has the potential or goal to recover muscle activation, an AFO that is less stiff should be considered ● FES demonstrates a therapeutic effect and may promote recovery of muscle activation		

*These effects are N/A since volitional muscle activation and electrical stimulation provoked muscle activation cannot be distinguished.

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