Upper-Limb	o Protocol
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	Silence	Epis	odic	Long-lasting (120 sec +)		
Relaxation	Silence	# events	# of muscles	duration	# of muscles	

Qualitative Computer Generated Evaluation Calculations

Reinforcement	Response		Repeatability	y over 3 trials				Magr	nitude	
	Present	once only	increasing	not changing	decreasing	# of muscles	Trial 1	Trial 2	Trial 3	Average
Deep breath										
Neck Flexion										

Voluntary movements		Response Present	Magnitude	Similarity Index
Shoulder	Shrug			
Bilat elbow	Flex			
Bliatelbow	Ext			
Right ebow	Flex			
Night ebow	Ext			
Left elbow	Flex			
Left elbow	Ext			
Bilat wrist	Ext			
Bliat whist	Flex			
Right wrist	Ext			
	Flex			
Left wrist	Ext			
	Flex			
Right	Grip			
Left	Grip			
Right	Opposition			
Left	Opposition			

Fast as Possible		Magnitude	Similarity index	Onset time	Termination time	antagonist burst presence
Right wrist	Ext					
Right whist	Flex					
Left wrist	Ext					
Left whist	Flex					

Passive stretch	Туре			Repeatability over 3 trials			# of musclos	Magnitude			
		Stretch	Shortening	once only	increasing	not changing	decreasing	# of muscles	Trial 1	Trial 2	Trial 3

Right elbow	Flex						
Right Elbow	Ext						
Right wrist	Ext						
Left elbow	Flex						
Left elbow	Ext						
Left wrist	Ext						
Left Whist	Flex						
Comments							

Trunk Protocol

Relaxation		Epis	odic	Long-lasting (120 sec +)		
	Silence	# events	# of muscles	duration	# of muscles	

Qualitative	Computer
Evaluation	Generated
Evaluation	Calculations

Reinforcement	Response		Repeatability	y over 3 trials	# of muscles	Magnitude			
Reinforcement	Present	once only	increasing	not changing	# OF ITTUSCIES	Trial 1	Trial 2	Trial 3	Average
Neck Flexion									

Voluntary		Response	Avg Max	Magnitude	Similarity
movements		Present	Pressure	magintude	Index
Shoulder	Shrug				
Cough					
Maximum	Inspiration				
WidAIITIGITT	Expiration				
Bilat elbow	Flex				
Dilat elbow	Ext				
Right ebow	Flex				
Right Ebow	Ext				
Left elbow	Flex				
Left elbow	Ext				
Bilat Hip Knee	Ext				
bliat hip knee	Flex				
Right Hip Knee	Ext				
Right hip knee	Flex				
Left Hip Knee	Ext				
Leit hip kilee	Flex				

Passive stretch		Ту	pe		Repeatability	y over 3 trials		# of muscles	Magnitude			
i assive streten		Stretch	Shortening	once only	increasing	not changing	decreasing	# Of Illuscies	Trial 1	Trial 2	Trial 3	Average
Right shoulder	Abduction											
Right shoulder	Adduction											
Left shoulder	Abduction											
Left shoulder	Adduction											
Right elbow	Flex											
Right elbow	Ext											
Left elbow	Flex											
Leiteidow	Ext											

Comments

Lower-Limb Protocol

	Silence	Epis	odic	Long-lasting (120 sec +)		
Relaxation		# events	# of muscles	duration	# of muscles	

Qualitative Evaluation Computer Generated Calculations

Reinforcement	Response		Repeatabilit	# of muscles	Magnitude					
Remotement	Present	once only	increasing	not changing	decreasing	# OF ITTUSCIES	Trial 1	Trial 2	Trial 3	Average
Deep breath										
Neck Flexion										
Jendrassik										
Shoulder Shrug										

Voluntary movements		Response Present	Magnitude	Similarity Index
Bilat Hip and Knee	Flex			
bilat hip and knee	Ext			
Right Hip and Knee	Flex			
Right hip and knee	Ext			
Left Hip and Knee	Flex			
	Ext			
Bilat Ankle	Dorsiflex			
Dildt AllKie	Plantar flex			
Pight Anklo	Dorsiflex			
Right Ankle	Plantar flex			
المطلب المساليات	Dorsiflex			
Left Ankle	Plantar flex			

Fast as Possible		Magnitude	Similarity index	Onset time	Termination time	antagonist burst presence
Right Ankle	Dorsiflex					
Left Ankle	Dorsiflex					
	Plantar flex					

Passive stretch		Туре		Repeatability over 3 trials				# of		Magnit	ude	
		Stretch	Shortening	once only	increasing	not changing	decreasing	muscles	Trial 1	Trial 2	Trial 3	Average
Right Hip and Knee	Flex											
Left Hip and Knee	Flex											
Left hip and knee	Ext											
Right Ankle	Dorsiflex											
Kight Ankie	Plantar flex											
Left Ankle	Dorsiflex											
	Plantar flex											

Phasic Stretch (taps)	Response	After-
Phasic Stretch (taps)	Present	discharge
Right Patellar		
Right Achilles		
Left Patellar		
Left Achilles		

Achilles Clonus	Present	Duration
Right		
Left		

Withdrawal from Plantar Stimulation	Present	Repeatability over 3 trials (TA muscle)					Magnitude			
	(TA muscle)	once only	increasing	not changing	decreasing	# of muscles	Trial 1	Trial 2	Trial 3	Average
Right										
Left										
Volitional Suppression of Withdrawal	Present	Repe	atability over	3 trials (TA mu	uscle)		Magnitude			
	(TA muscle)	once only	increasing	not changing	decreasing	# of muscles	Trial 1	Trial 2	Trial 3	Average
Right										
Left										

Comments

SCI-Pediatric Specific Recommendation

The elements on this form are recommended as Exploratory for SCI-Pediatric studies. Duration of test is long and may be difficult for children to endure since subject needs to be lying supine and cooperative during testing. Additionally, subject needs to follow directions of test. Lower age limit could be around 8 years of age but would depend on subject and maturity.

Reference:

Zoghi M, Galea M, Morgan D. A Brain Motor Control Assessment (BMCA) protocol for upper limb function. PLoS One. 2013; 8(11):e79483.