TARDIEU SCALE

This scale quantifies muscle spasticity by assessing the response of the muscle to stretch applied at specified velocities.

Grading is always performed at the same time of day, in a constant position of the body for a given limb. For each muscle group, reaction to stretch is rated at a specified stretch velocity with 2 parameters x and y.

Velocity to stretch (V)

Quality of muscle reaction (X)

V1	As slow as possible	0	No resistance throughout passive movement
V2	Speed of the limb segment falling	1	Slight resistance throughout,
V3	As fast as possible (> natural drop)		with no clear catch at a precise
			angle
V1 is used to measure the passive range of		2	Clear catch at a precise angle,
Motion. (PROM). Only V2 and V3 are used			followed by release
to rate spasticity		3	Fatigable clonus (<10secs)
			occurring at a precise angle
		4	Unfatigable clonus (>10secs)
			occurring at a precise angle
		5.	Joint Immobile
Ang	le of muscle reaction (Y)		

Measure relative to the position of minimal stretch of the muscle (corresponding at angle)

Spasticity Angle

R1 Angle of catch seen at Velocity V2 or V3

R2

Full range of motion achieved when muscle is at rest and tested at V1 velocity

Boyd, Graham 1999

A large difference between R1 & R2 values in the outer to middle range of normal m. length indicates a large dynamic component

• A small difference in the R1 & R2 measurement in the middle to inner range indicates predominantly fixed contracture

Date	Joint/ Muscle	L/R	V	Х	R1	R2	Active ROM	Power MRC	Ashworth Rating	0

Ref: Boyd R, Graham K. Objective Measurement of clinical findings in the use of Botox type A for the management of children with Cerebral Palsy. European Journal of Neurology 6(Supp 4) S23-35
Tardieu G, Rondont O, Mensch J, Dalloz J, Monfraix C, Tabary J. Responses electromyograhpiques a l'etirement musculaire chez l'homme normal. Revue Neurologie + 97(1), 60-61
Gracies J, Marosszzeky J, Renton R, Sandaman J, Gandevia S, Burke D. Short term effects of dynamic splints on the upper limb in hemiplegic patients. Archives of Physical Medicine and Rehabilitation, 81 1547-1555.

Testing Positions

Upper Limb

To be tested in a sitting position, elbow flexed by 90° at the recommended joint positions and velocities.

Shoulder	Horizontal Adductors	V3	
	Vertical Adductors	V3	
	Internal Rotators	V3	
Elbow	Flexors	V2	Shoulder adducted
	Extensors	V3	Shoulder abducted
	Pronators	V3	Shoulder adducted
	Supinators	V3	Shoulder adducted
Wrist	Flexors	V3	
	Extensors	V3	
	Fingers		Angle PII of digit III- MCP
	Palmar Interossei + FDS	V3	Wrist resting position

Lower Limb

To be tested in supine position, at recommended joint positions and velocities

Hip	Extensors	V3	Knee extended
	Adductors	V3	Knee extended
	External Rotators	V3	Knee flexed by 90
	Internal Rotators	V3	Knee flexed by 90
Knee	Extensors Flexors	V2 V3	Hip flexed by 30 Hip flexed
Ankle	Plantarflexors	V3	Knee flexed by 30