CLINICAL ASSESSMENT SCALES · SPASTICITY

Spasticity Scoring Systems

Modified Ashworth Scale and Modified Tardieu Scale for grading spasticity

1 Modified Ashworth Scale

Resistance to **passive movement** of the affected part through its range of motion (ROM).

Grade	Description
0	No increase in muscle tone.
1	Slight increase in muscle tone, manifested by a catch and release or by minimal resistance at the end of the ROM when the affected part(s) is moved in flexion or extension.
1+	Slight increase in muscle tone, manifested by a catch, followed by minimal resistance throughout the remainder (less than half) of the ROM.
2	More marked increase in muscle tone through most of the ROM, but affected part(s) easily moved.
3	Considerable increase in muscle tone; passive movement difficult.
4	Affected part(s) rigid in flexion or extension.

Source: Bohannon RW, Smith MB. Interrater reliability of a modified Ashworth scale of muscle spasticity. *Phys Ther*. 1987;67(2):206–207.

2 Modified Tardieu Scale (MTS)

Quality of muscle reaction to passive stretch at **defined velocities**.

Code	Description
VELOCITY OF STRETCH	
V1	As slow as possible, slower than the natural drop of the limb segment under gravity.
V2	Speed of the limb segment falling under gravity.
V3	As fast as possible, faster than the rate of the natural drop of the limb segment under gravity.
QUALITY OF MUSCLE REACTION (SCORING)	
0	No resistance throughout the course of the passive movement.
1	Slight resistance throughout the course of passive movement, no clear catch at a precise angle.
2	Clear catch at a precise angle, interrupting the passive movement, followed by release.
3	Fatigable clonus (<10 s when maintaining pressure) appearing at a precise angle.
4	Unfatigable clonus (>10 s when maintaining pressure) appearing at a precise angle.
5	Joint is immovable.

Angles recorded

R1: angle of catch at fast velocity (V3).
R2: full passive range at slow velocity (V1).

Interpretation

A large **R2 – R1** difference suggests a dynamic (spastic) component; a small difference suggests fixed contracture.

Source: Boyd RN, Graham HK. Objective measurement of clinical findings in the use of botulinum toxin type A for the management of children with cerebral palsy. *Eur J Neurol*. 1999;6(Suppl 4):S23–S35. Based on Tardieu G, et al. 1954, as revised by Held JP, Pierrot-Deseilligny E, 1969.

Both scales reproduced with attribution and reformatted by the Pediatric Complex Care Platform; all rights remain with the original authors and publishers.