

## Modified Ashworth Scale

The Modified Ashworth Scale (MAS) measures resistance during passive soft-tissue stretching. It is a quick and easy measure that can help assess the efficacy of treatment. The following conventions prevail:

- The MAS is performed in the supine position (this will garner the most accurate and the lowest score as any tension anywhere in the body will increase spasticity)
- Because spasticity is “velocity dependent” (the faster the limb is moved, the more spasticity is encountered), the MAS is performed while moving the limb at the “speed of gravity”; this is defined as the same speed at which a non-spastic limb would naturally drop (fairly fast)
- The test is performed a maximum of three times for each joint; if more than three times, the short-term effect of a stretch can influence the score
- The MAS is performed prior to goniometric testing; goniometric testing provides a stretch, and the short-term effect of a stretch can influence the score

### Scoring

- 0 = Normal tone, no increase in tone
- 1 = Slight increase in muscle tone, manifested by a catch and release or minimal resistance at the end of the range of motion (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

### Positions

The positions used for an MAS assessment are as follows:

**Score \_\_\_\_\_ Elbow.** *Start position:* Elbow fully flexed, forearm neutral. Movement: Extend elbow from maximum possible flexion to maximum possible extension. (Triceps would be in the same position, opposite direction.)

**Score \_\_\_\_\_ Wrist.** *Start position:* Elbow as straight as possible, forearm pronated. Movement: Extend the patient's wrist from maximum possible flexion to maximum possible extension.

**Score \_\_\_\_\_ Fingers.** *Start position:* Elbow as straight as possible, forearm neutral. All fingers are done at once. Movement: Extend the patient's fingers from maximum possible flexion to maximum possible extension.

**Score \_\_\_\_\_ Thumb.** *Start position:* Elbow as straight as possible, forearm neutral, wrist neutral. Movement: Extend the thumb from maximum possible flexion (thumb against index finger) to maximum possible extension (in anatomical position, “abducted”).

**Score \_\_\_\_\_ Hamstrings.** *Start position:* Prone so that ankle falls beyond end of the plinth, hip in neutral rotation. Movement: Extend the patient's knee from maximum possible flexion to maximum possible extension

**Score \_\_\_\_\_ Quadriceps.** *Start position:* Prone so that ankle falls beyond end of the plinth, hip in neutral rotation. Movement: Flex the patient's limb from maximum possible flexion to maximum possible extension

**Score \_\_\_\_\_ Gastrocnemius.** *Start position:* Supine, ankle plantarflexed, hip in neutral rotation and flexion. Movement: Dorsiflex the patient's ankle from maximum possible plantarflexion to maximum possible dorsiflexion not more than three consecutive times and rate the muscle tone.

**Score \_\_\_\_\_ Soleus.** *Start position:* Supine, ankle plantarflexed, hip in neutral rotation and flexion and with the knee flexed to ~15°. Movement: Dorsiflex the patient's ankle from maximum possible plantarflexion to maximum possible dorsiflexion.