



# AMI Post-Stroke Spasticity (PSS) Referral Tool

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# Post-Stroke Spasticity (PSS) Referral Tool



This tool is recommended by experts in the field of stroke rehabilitation and neurorehabilitation to be used when evaluating patients who have had a stroke. Ideally this should be used within the first 12 weeks post-stroke, but it can still be used at other timepoints. It is recommended that this screening tool be used during regular follow-up visits following a stroke to identify and manage symptoms of PSS.

## Urgent referral

### Refer to a spasticity specialist

(e.g. neurologist, physiatrist, physical medicine and rehabilitation [PM&R], or spasticity clinic)

If both of the following criteria are met:

1. Moderately, markedly or severely increased muscle stiffness across two or more joints that causes functional impairment or problems related to active or passive motion<sup>a,1,2</sup>
2. Severe loss of sensorimotor function (e.g. severe decrease in surface sensation, impaired proprioception and severe motor dysfunction)<sup>b,3,4</sup>

- Urgently initiate physiotherapy (evaluation and treatment) and refer patient to an occupational therapist with experience in stroke management
- Immediately refer the patient to a physician or other healthcare professional who is a spasticity specialist (e.g. neurologist, physiatrist, physical medicine and rehabilitation [PM&R], or spasticity clinic)<sup>8,9</sup>

## Routine referral

### Consult with the multidisciplinary team (MDT)

In the presence of mildly<sup>a</sup> increased muscle tone across one joint and involuntary muscle contractions in the affected limb<sup>c,1</sup> plus one or more of the following:

1. Reduced sensitivity on one side of the body and/or visual inattention<sup>d,1,5</sup>
2. Weakness of the limbs and problems with function that cause difficulties with active range of motion and/or daily living<sup>e,1,2,6,7</sup>
3. Significant damage to the corticospinal tract\*, as seen on CT and/or MRI scan<sup>1</sup>

- Initiate physiotherapy and consult with the MDT for advice<sup>9,10</sup>
- If symptoms do not resolve, refer patient to a spasticity specialist and request that they assess the patient and decide if additional intervention is needed<sup>8</sup>

## Periodic monitoring

### Monitor periodically

Monitor periodically (re-evaluate in three to six months) if the patient has persistent dexterity problems in the absence of increased tone\*

- Patient should be evaluated within three months, and monitored by a physiotherapist or occupational therapist with experience in stroke management\*
- Provide the patient and caregivers with information about post-stroke spasticity management and relevant contacts<sup>9</sup>

#### Possible additional risk factors for the development of PSS include:

Smoking (defined as current and past smokers)<sup>1,11</sup> | Left-sided stroke<sup>1</sup> | Enhanced manual activities prior to the stroke<sup>1</sup>

\*Based on the clinical expertise of Dr Rhoda Allison, Dr Ganesh Bavikatte, Professor Philippe Marque, Associate Professor Barry Rawicki, Dr Maria Matilde de Mello Sposito, Dr Paul Winston & Professor Jörg Wissel.

# Footnotes and Supporting Literature



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  5. Wilkinson D, Sakel M, Camp SJ, *et al.* Patients with hemispatial neglect are more prone to limb spasticity, but this does not prolong their hospital stay. *Arch Phys Med Rehabil.* 2012;93:1191–1195
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  8. Wissel J, Ward AB, Erztgaard P, *et al.* European consensus table on the use of botulinum toxin type A in adult spasticity. *J Rehabil Med.* 2009;41:13–25
  9. NICE Pathways: Stroke overview, available at: <https://pathways.nice.org.uk/pathways/stroke#path=view%3A/pathways/stroke/stroke-rehabilitation.xml&content=view-index>. (Accessed: May 2021)
  10. Duncan PW, Zorowitz R, Bates B, *et al.* Management of adult stroke rehabilitation care: a clinical practice guideline. *Stroke.* 2005;36:e100-43
  11. Leathley MJ, Gregson JM, Moore AP, *et al.* Predicting spasticity after stroke in those surviving to 12 months. *Clin Rehabil.* 2004;18:438–443
  12. Bohannon RW and Smith MB. Interrater reliability of a Modified Ashworth Scale of muscle spasticity. *Phys Ther.* 1987;67:206–207
- a. Mildly increased muscle stiffness is a Modified Ashworth Scale (MAS) 1 or +1, while moderately is MAS 2, markedly is MAS 3 and severe is MAS 4\* (see Bohannon RW, *et al.* 1987 for more information<sup>12</sup>)
  - b. Measured using the Fugl-Meyer Upper Extremity Scale<sup>3</sup> (see Fugl-Meyer AR, *et al.* 1975 for more information<sup>4</sup>)
  - c. Muscle contractions may occur due to spasms, disturbed reciprocal inhibition or spastic dystonia and should be differentiated from contractures
  - d. Visual inattention includes hemianopsia, scotoma or visual neglect
  - e. Can be measured with the Barthel Index (low score) and EQ-5D (low score)<sup>1</sup>

The PSS Referral Tool was created with the assistance of a group of international experts in the field of PSS, utilising both published risk factors and their own clinical experience.

Publications related to the tool:

Wissel J, Allison A, Bavikatte G, *et al.* Development of an Early Identification Tool in Post-Stroke Spasticity (PSS): The PSS Risk Classification System. Poster presented at the DGN Congress, 25–28 September 2019, Stuttgart, Germany