

# July 2018 Spasticity in Stroke



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Hello members.

We are continuing our focus on spasticity for July.

The fourth abstract, article, and the clinical point of view is provided below.

This week's clinical point of view further explores the prevalence, course, and treatment considerations for patients with stroke and TBI who present with spasticity.

Enjoy.

## **Sunnerhagen KS, et al. Onset, time course and prediction of spasticity after stroke or traumatic brain injury. Ann Phys Rehabil Med (2018).**

Available online at ScienceDirect. Link [here](#).

### **Abstract**

*Objective:* To describe spasticity from the onset of acquired brain injury, time course over the first year and factors associated with prediction of the development of spasticity.

*Methods:* Recent relevant literature known to the authors, along with a complementary search yielding a total of 9 articles, representing the base for this scoping review

*Results:* Spasticity can be seen in the first week after brain injury and is more common in the upper than lower extremity. The severity of upper-limb impairment is a major factor in the development of spasticity during the first year after stroke. The combination of reduced arm motor function and spasticity in an early phase (4 weeks post stroke) is an important predictor of the development of severe spasticity after 12 months. Spontaneous reduction in spasticity was seldom reported but may occur especially in mild forms of spasticity.

*Conclusion:* Signs of spasticity can often be noted within the first 4 weeks after brain injury and is more common in upper extremity than lower extremity. Impaired sensorimotor function is a predictor. These findings highlight the importance to follow up patients with increased risk of developing severe spasticity to be able to start adequate spasticity treatment and prevent the negative consequences of spasticity. Understanding spasticity onset and progression also provides a basis for the development of effective therapies.

### **Clinical Points of View**

- Percentages for UE spasticity in the entire CVA population is 4-38%.
- Percentage of UE spasticity increases the subset of CVA survivors that have impaired sensorimotor function to between 25-46%
- No statistics were presented in this article about LE spasticity however UE spasticity is more common than LE spasticity. As a clinician you should be monitoring LE for spasticity to evaluate how it may affect motor control but also be aware that UE may need more attention for anti spasticity treatments.

### ***Prevalence and Time course***

- In patients post stroke 4-25% have spasticity shortly after stroke (2-10 days) so be sure to evaluate UE and LE major muscle groups in order to implement treatments early.
- Spasticity increased in 13% of patients post brain trauma from day 10 to 4 weeks so it is imperative to continuously monitor in acute stages to describe impairments accurately and direct patients in need to appropriate care.
- The prevalence of spasticity is highest at 4 weeks (27-44%) but reduces slightly around 3-4 months (22% -38%). Spasticity severity increases during this time from 4% at one month to 9-10% at 3-4 months. This mild improvement is presumably related to an improvement in motor control in those with mild spasticity as supraspinal control is restored. In those who continue to lack supraspinal control theoretically increase in spasticity from 4 weeks to 3 months. Although the mechanics of spasticity and recovery are poorly understood it would seem feasible that functional goal oriented intense practice that promotes neuroplasticity of cortical structures could be used to decrease spasticity.
- After 3 months to 12 months the spasticity prevalence remains stable however the severe spasticity continues to increase to 29% at 12 months. No data is available after 1 year at this time.

### ***Predictive Indicators of Spasticity***

- First 2-4 weeks sensorimotor impairment rather than spasticity is strongest predictor of severe spasticity at 12 months
- Combination of reduced arm function and spasticity in first month is important predictor of severe spasticity at 12 months

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