Stroke Spasticity Management
From Evidence to Every Day Practice

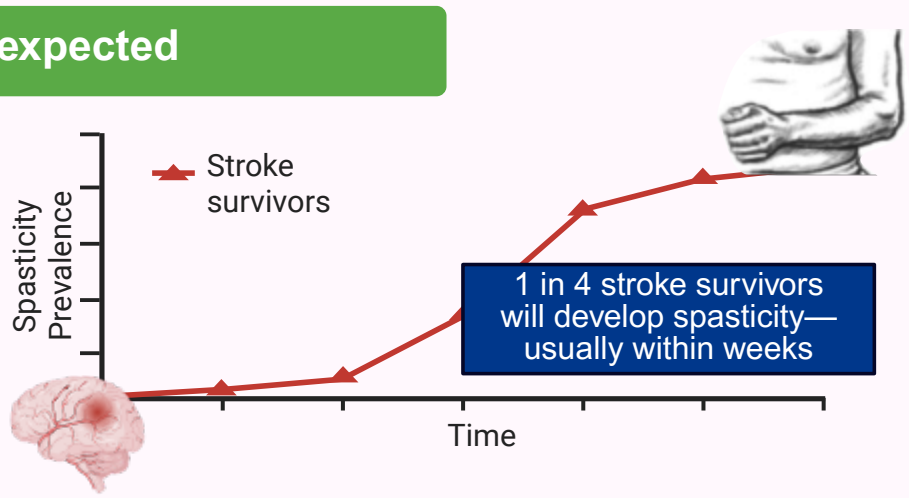
Post Stroke Spasticity Burden: A Hidden Driver of Disability, Cost, and Inequality

Stroke-related spasticity is common, starts early, and—if untreated—drives long-term disability, caregiver burden, and excess healthcare costs, especially in low- and middle-income countries

Spasticity is not rare — it is expected

Prevalence:
- 19–92% of stroke survivors in the first year
- ~38% in the first year
- **Pooled prevalence ≈ 25%**

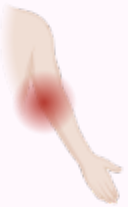
Onset:
- Most cases appear within **6 weeks**, often within the **first month** after stroke



Spasticity drives permanent disability

Function
- Walking
- Eating
- Dressing

Complications
- Contractures
- Fractures
- Skin breakdown



Pain
- Spasms
- Fatigue
- Sleep disturbance

Quality of life
- Depression
- Poor self-image

The Burden of Spasticity

≈40% higher total healthcare costs

Creates a second patient: **the caregiver**

Amplifies health **inequity**

Spasticity amplifies existing health-system weaknesses. LMICs face:
- **Higher baseline chronic disease burden**
- **Delays in seeking and receiving care**
- **Shortage of rehabilitation specialists**
- **Limited access to post-stroke rehab**
- **Poverty, stigma, low awareness**

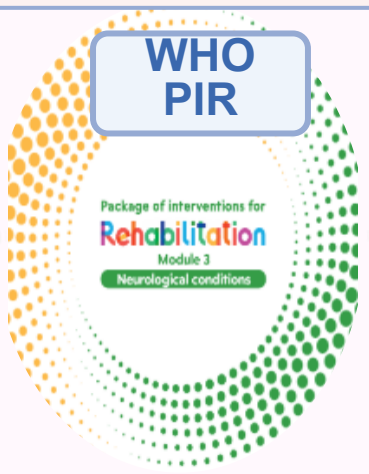
The Burden is Preventable

Early detection and structured rehabilitation must become standard of stroke care worldwide

Care Pathway

Screen early → **Asses** → **Treat** → **Prevent complications**

Countries do not need to reinvent the system, WHO provides a scalable framework: The WHO Package of Interventions for Rehabilitation (PIR):



- **Goal-oriented rehab**
- **Physical + pharmacologic + focal therapies**
- **Multidisciplinary teams**
- **Designed for universal health coverage**

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World Stroke Academy

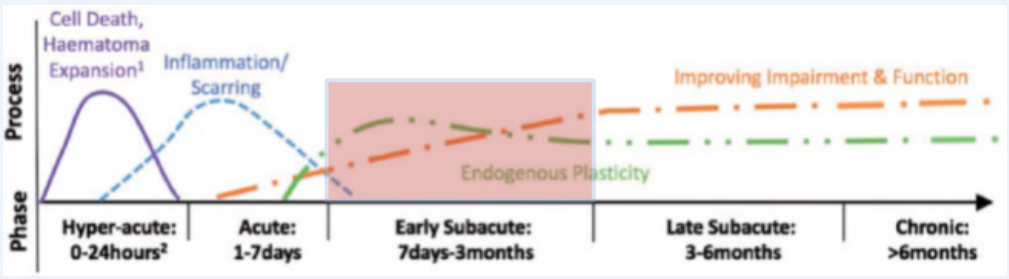
Optimizing Botulinum Toxin Therapy in Spasticity:
From Injection to Strategy

Botulinum toxin is not a dose — it is a strategy. **Outcomes depend on timing, biomechanics, muscle selection, and rehabilitation—not just how much toxin is injected.**

Inject during the "modulation window"

Early after stroke, BoNT can **reshape motor patterns**, not just reduce tone

Early injection:
- Reduces maladaptive synergies
- Prevents deforming spastic paresis
- Improves long-term function



Early BoNT-A injections (within 3 months post-stroke) are recommended for patients with or at high risk of´post stroke-spastic movement disorders, as early treatment prolongs efficacy at lower doses and reduces later contractures and spasticity-related pain

Function beats tone

BoNT goals **must align**:
- What the patient wants
- What is biomechanically possible
- What improves real-world function

Inject the pattern, not the muscle

- Structured observation
- sEMG
- Gait analysis
- Diagnostic nerve blocks

- **Task-oriented rehab**
- **Sensory feedback**
- **Brain stimulation**

= **Neuroplastic synergy**

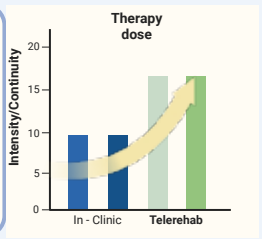
When BoNT fails: Look for system errors, not drug failure:
- Wrong muscle
- Wrong timing
- Wrong goal
- No rehab

Spasticity management is an art informed by science.
Smart timing, biomechanics, and multimodal care determine BoNT success

The Role of Telerehabilitation in Spasticity Care

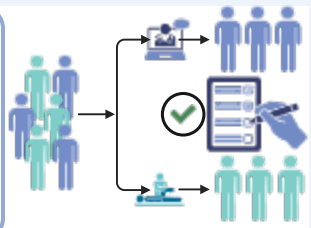
Expands access to rehabilitation
Delivers therapy at home, **overcoming** distance, mobility, and transportation **barriers**

Increases rehabilitation dose and continuity
Enables **higher** therapy intensity and sustained **engagement** beyond what clinic-based care typically provides



Telerehabilitation can safely and effectively increase access, dose, and continuity of post-stroke rehabilitation—including spasticity management—beyond what traditional clinic-based care can deliver

Clinically effective and safe
Non-inferior to in-clinic rehabilitation, with high **adherence** and patient **satisfaction**



Supports spasticity management
Enables **targeted** exercises, clinician-guided sessions, and remote monitoring to **complement** in-clinic spasticity care

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