

physiotherapy management for stroke .

Co-funded by the
Erasmus+ Programme
of the European Union



**Increasing the Conformance of Academia
towards Rehabilitation Engineering (i-CARE)**

Project ref. 586403-EPP-1-2017-1-PS-EPPKA2-CBHE-JP

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Date:14/3/2020



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BATTI
Ideas transforming the future

This publication has been produced with the financial support of the Erasmus+ Program of the European Union. The contents of this publication are the sole responsibility of the partners and can in no way be taken to reflect the views of the European Commission.

What do patients need ?

- **Assessment / evaluation**
- **Emotional support**
- **Treatment**
- **Rehabilitation**
- **Family education**
- **Environment adaptation**

Goals of Physiotherapy

- **Prevention of medical complication**
- **Prevention of deconditioning and contractures**
- **Training of new skills**
- **Promote maximal recovery**
- **Assist adaptive recovery**

Tasks of Physiotherapy during acute phase



- **Respiratory care.**
- **Range of motion stretching exercises**
- **Frequent position changes**
- **Bed mobility exercises**
- **Sitting in upright position to improve orthostatic tolerance**
- **Patient and family education**



physiotherapy interventions



Positioning:

Therapeutic positioning aims to

- **reduce skin damage**, limb swelling, shoulder pain , subluxation, and discomfort.
- **maximize function**
- **maintain soft tissue length** ,
- **prevent complications** such as pressure sores, and contractures .



Early Mobilizations



Early mobilization (e.g. activities such as sitting out of bed, transfers, standing and walking) aims to;

- **reduces the time** witch between **stroke** and the **first time** the patient leaves the **bed**.
- **increases** the amount of **physical activity** that the patient engages in outside of bed .
- **minimizes** the **risk** of the **complications** of immobility and **improve functional recovery**



Balance

- **Impaired balance** often leads to reduced confidence, fear of falling and **increases the risk of falls**.
- **Trunk exercise** training improve trunk performance and dynamic sitting balance .

Sitting

Practicing sitting with **supervision/assistance** should be undertaken for individuals who have difficulty in sitting.

Standing



Practice of standing balance should be provided for individuals who have difficulty with standing. Strategies could include:

- **Practicing functional task**-specific training while standing ·
- **Walking training** that includes challenge to standing balance (e.g. over ground walking) ·
- Receive progressive **balance training**
- Receive **lower limb strengthening exercises** ·
- Consider for an **ankle-foot orthosis** ·



Gait & Mobility

The **highest priority** for many people with limited mobility after stroke is to **walk independently**. This focuses on **treatments** and **equipment** aimed at improving walking and includes exercise.

Interventions should include

- **strengthening exercises for the leg,**
- **over-ground walking, and**
- **treadmill training** with and without body weight support

Treadmill Training



Treadmill training can be utilized for both **Gait Re-education / Training** ,
But also Treadmill training may **improve walking speed and endurance**



Upper Limb

Up to 85% of individuals post stroke experience **altered arm function**, with approximately 40% of individuals being affected by upper limb function **long term**.

Loss of arm function affects **quality of life**, and functional motor recovery in affected upper extremities in patients with hemiplegia is the **primary goal of physical therapists**.

Spasticity management

- Positioning and orthotics
- Stretching and other exercises
- Spasticity can cause **discomfort** or **pain** for the pt. and can be associated with **activity limitation**.

Spasticity is common, especially in **a non-functional arm** with close association between spasticity and other impairments of arm function and mobility.

physiotherapy equipment's

- Partial body weight – supported treadmill training
- Electrical stimulation
- Robotic technology
- Parallel bars
- Wall bars
- Static cycle
- Shoulder wheel
- Stair case
- Pulleys
- Tilt bed

Electrical Stimulation



Functional Electrical Stimulation appears to moderately improve upper limb activity compared with both no intervention and training alone.

Electrical stimulation should be used in stroke rehabilitation to improve the ability to perform functional upper limb activities.





functional electrical stimulation

Robotic technology

- New class of clinical tools
- Highly reproducible motor learning experience
- Relieves repetitive effort of therapists



Robotic technology

Parallel bars

- Co ordination and balance exercises : pt. with co ordination problems , typically resulting from strokes or brain trauma .
- Ambulation exercises : improve a patients ability to **walk independently** or with assistance develop or improve the range of motion of their joints as well as develop any lost muscle strength .
- Gait training .



Parallel bars

Wall bars

- Exercises for **balance problems** , **coordination problems** .
- **Increase stability** and confidence of patients and provide support



Wall bars

Static cycle

- In comparison with other exercises cycling is a relatively (knee friendly) activity .
- Can help to improve knee joint mobility and stability .
- Cycling is frequently used as a physiotherapy exercise modality after stroke



Static cycle

Shoulder wheel

- Mobilizing the shoulder complex
- Improve the abduction and external rotation movements
- Use in patient with stroke



Shoulder wheel

Stair case

- Improve **strength** **power** , flexibility .
- Improve **lower limb** **mobility** and **strength**



Pulleys

- Simple to use **re-building muscles** and **increasing range of motion**
- Dual overhead pulley offers extra stability and can be used with weights on one handle to counterbalance the strength
- Use in **weakness in upper limbs** .



Pulleys

Tilt bed

- Patient who are unable to stand on his lower limbs because of muscular weakness due to stroke
- Use to minimize postural hypotension
- Increased blood circulation towards the heart
- Minimize osteoporotic changes in immobile patients



Tilt bed

Thank you