Brunnstrom Movement Therapy Frame of Reference

The Brunnstrom Movement Therapy Frame of Reference is based on motor control theories. This Frame of Reference addresses the loss of motor control caused by stroke and classifies affected motor functions into stages. It outlines how muscle control can be restored after a stroke within 6 stages of recovery.

PLAY PICMONIC

Population

Stroke or Motor Control Deficits

Stroke-crew with Motor Controller Defecits

The Brunnstrom Movement Therapy Frame is a treatment approach used in neurorehabilitation for patients who have suffered a stroke or other neurological conditions that affect movement. It is not a population but rather a therapeutic framework that can be used to treat patients with different levels of motor impairment.

Concepts

Primitive Synergistic Patterns

Primitive Synchronized-swimming-energy Patterns

Primitive synergistic patterns are used in order to improve motor control through central facilitation.

Limb Synergies and Primitive Reflexes

Limb Synchronized-swimming-energy and Primitive Reflex-hammer

This FOR is based on the concept that damaged CNS regressed to older or less mature patterns of movements (limb synergies and primitive reflexes).

Normal Patterns of Movements

Normal Pattern of Dance

Synergies, primitive reflexes, and other abnormal movements, such as spasticity and/or muscle stiffness, are considered normal processes of recovery before attaining normal patterns of movement. Patients are taught to use and voluntarily control the motor patterns available to them during their recovery process. These synergies should be facilitated and encouraged during treatment.

6 Stages of Recovery

Stage 1:

Flaccidity

Limp-wheelchair

This stage is the initial stage of shock, and flaccidity paralysis sets in. This means there is little to no movement, no resistance to passive motion, and no initiation of voluntary movement. This state is caused by nerve damage that prevents the muscles from receiving normal signals from the brain, regardless of whether the brain is able to move those muscles or not. At first, in the early stages of flaccidity, the patient cannot initiate any muscles on the affected side of their body.

Stage 2:

Spasticity Appears

Spaz-tick Appears

In Stage 2 of the stroke recovery process, spasticity begins to develop. Muscles begin to make mostly involuntary small, spastic, and abnormal movements. These movements are a good sign of the start of recovery.

Stage 3:

Increased Spasticity

Up-arrow Spaz-tick

During stage 3 of Brunnstrom Movement Therapy, there is an increase in spasticity caused by damage to the nerve pathways within the brain or spinal cord that controls muscle movement. Due to this damage, the brain's unable to turn off, or restrict, the signals from the brain's motor neurons which causes the muscles to contract too often.

Stage 4:

Decreased Spasticity

Down-arrow Spaz-tick

During stage 4 of Brunnstrom Movement Therapy, the patient will have decreased spasticity, with patients regaining control mostly in the extremities, with limited ability to move normally. Spasticity is less evident than earlier, and movement combinations that deviate from synergies are possible.

Stage 5:

Complex Movement Returns

Complex Dance Returns

Stage 5 of Brunnstrom's Movement Therapy has the patient's spasticity continuing to decline, and more coordination and voluntary movements occur. Complex movement returns, and the patient will make more controlled and deliberate movements.

Stage 6:

Spasticity Disappears

Spaz-tick Disappears

In stage 6 of Brunnstrom's Movement Therapy FOR, spasticity disappears completely. The patient should be able to move the joints and muscles with coordination and may complete complex reaching movements. Spastic movements have ceased, and the patient may have a full recovery.

Intervention

Normal Function Returns

Normal Function Returns

Stage 7 is the last stage of the Brunnstrom's Approach and is when the client will regain full function in areas that had been previously affected by stroke or other medical diagnosis. The patient may be able to move their legs, arms, hands and feet in a controlled and voluntary way and normal function returns. This is the ultimate goal for the patient.

Intervention

Goals of Treatment

Goals with Treats

The goals of treatment are: to recover voluntary movements, to improve functional tasks and sequencing of functional activities to achieve a specific aim, to improve posture, motor control, and muscle strength, and to increase independence.