

## ***Case Scenario***

He is **7 years old** boy. He was born in the 30<sup>th</sup> of September 2008; He is diagnosed with right hemiplegia due to stroke in utero. At the age of **4 months** his parents noticed that he uses his left hand mainly, and then at **6 months** they noticed that he doesn't use his right hand at all. They also noticed that he has some dysfunction in the developmental phases and that he might have skipped some milestones including sitting and rolling. Dylan didn't crawl at all, instead he scooted around on his bottom and couldn't weight bear on his right hand. In addition, at the age of **21 months**, he started walking and according to the developmental milestone he was slightly delayed.

We administered the COPM for his mother to identify the occupational performance problem and the most two important ones were active recreation (playground) and functional mobility (climbing stairs).

## ***Activity Analysis***

1. He steps on the stairs using the dominant leg (stronger leg)
2. Place the other leg on the same step of the stair
3. Climb the whole stairs of 5 steps (he alternated between his legs only the last step)
4. Walk to the slide
5. Stand on the slide
6. Sit on the top of the slide
7. Slide until he falls on the floor

We observed him during a playground activity to determine the problem limitations and according to it we noticed that he faces difficulty in the slide specifically when climbing stairs; he needs assistance as he holds the rails while climbing the stairs, lacks coordination and does it slower than the other children. Based on that, he is level 2 in GMFCS. For MACS, we observed how he handles and manipulates a toy and his level is 2.

## ***Classification systems:***

- *MACS: he is level (2)*
- *GMFCS: he is level (2)*

### ***Skills Required for Sliding***

- **Motor Skills:** align, stabilize, position, bend, coordinate, walk, endure, pace, balance
  - Only balance and coordination are affected
- **Process Skills:** pace, attend, initiate, continue, sequence, terminate, navigate, adjust, accommodate
- **Social Skills:** gesticulate, turn toward, take turns

He has a problem in functional mobility and play due to poor balance and coordination skills.

### ***Goals***

#### ***Long term goal:***

- He will be able to climb a straight 5 steps stairs with supervision within 10 OT sessions

#### ***Short term goals:***

- He will be able to balance himself standing and walking on obstacle course with an arch independently for 30 seconds within 4 sessions
- He will be able to complete bilateral activity like threading 15 beads with minimal assistant within 6 sessions
- He will be able to alternate his legs on stairs while holding both handrails with supervision within 8 sessions

The **prerequisites** required for climbing the stairs to slide are balance, coordination, postural control and muscle strength.

### ***Approaches***

- Establish and Restore

- We will use the NDT FOR → Reduces the effect of spasticity, improves the child's quality of posture and movement and eventually enhances the child's performance. It includes weight bearing and bilateral coordination.
- We will also use the Biomechanical FORs along with CIMT to improve ROM and strength of the affected hand. The non-affected hand of the child is going to be restrained while performing an activity, such as transferring items using tweezers, to force him to use his affected hand.

### ***Activities***

- Weight Bearing → The child will lay on his stomach on either a scooter board or a therapy ball while performing an activity.
- Bilateral Coordination → threading beads activity
- Balance → Stand with one foot on the ground while the other foot is resting on a stool in front of the other foot. To grade it up we can have the child place one foot on a ball and to progress even further the child stands with one foot in the air.

### ***Adapt and Modify***

- ***Adaptation***
  - Braces (Orthosis)
  - Ankle-Foot Orthoses (Orthotic Boots)

These all help in improving mobility, muscle control and tone, stretching muscles and stability.

- ***Environmental Modification***
  - Smaller, Padded steps
  - Ramps
  - Bridging pathway
  - Universal design

## ***Maintain***

- ***Home Program*** → A home program that includes activities to maintain the progress of the child is provided to the parents. It mainly included:
  - Weight bearing
  - Playdough activities
  - bilateral activities
  - Walking on a line
  - Kicking a ball