

Neurologic Assessment Foundations

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We need a mindset shift:

The problem of our profession is that we divide body parts. We need the whole body for function. An advanced clinician treats the whole body. We are “POTS”

General Neurology Evaluation



History & Subjective is key:

- Birth and developmental history
- Any medications?
- What does a typical day look like? What positions is the child in?
- What equipment do you have?
- What is difficult for patient? (play, mobility, ADL's, school)
- Families goals and expectations?
- What does behavior management at home look like?

*****SUBJECTIVE Is not something to skimp on. It can unlock what you need to know to meet your goals.

Assessment



- Posture
- Tone
- Range of Motion
- Quality of movement
- Grasp
- Developmental Milestones



Posture

- BOS + Alignment = Posture
 - Decreased BOS -> Increased muscle activity
 - Increased BOS -> Decreased muscle activity
- Increase the demand of the task when the deficit is muscle activation
- Every movement is a choice
 - Compensation vs. Gold Standard



Reaching Posture Lab



- Posterior tilt and kyphosis and reach up
- Shifted to one side and reach lateral
- With shoulder internal rotation



Tone

Types:

- Spasticity (velocity-dependent increase in muscle tone to passive movement)
- Dystonia (sustained or intermittent muscle contractions causing abnormal and often repetitive, movements, postures, or both)
- Rigidity (hypertonic state characterized by constant resistance throughout range of motion)
- Hypotonia (low muscle tone)

HAT (Hypertonia Assessment Tool)



Range of Motion (ROM)

- As we look at tone and feel the quality of the muscle, how does this affect their range of motion?
- How do the ROM limitations affect the child's function?
 - Upper extremity
 - Lower extremity
 - Trunk/ribcage/spine



Quality of Movement

Identify specific deficits to increase success of treatment

- Inability to initiate contraction
- Force production decreased
- Inability to sustain contraction
- Decreased tissue length
- Speed, timing, scaling, muscle selection etc.

Grasp

- Types of grasp
- What is happening proximally?

[Reach and Grasp with CP](#)



Development/ADLs

- Know your progression of development milestones (both fine and gross motor)
- Know the purpose of each milestone and the foundation it builds for higher-level skills down the line.
 - Example: crawling and quadruped – builds wrist extension and intrinsic muscle strength of the hand
- ADLs – collaborating with family on what is important to them to ease caregiver burden and promote participation of the child in those tasks



Pulling It All Together

How do we combine all this assessment information into a plan of care for the patient?

Example: 5 year old child with CP cannot complete upper body dressing.

- Impairments (as gained from our assessment):
 - posterior pelvic tilt
 - thoracic rounding
 - weak core
 - limited shoulder ROM
 - weak grasp
 - decreased motor planning