OCCUPATIONAL THERAPY FOR CHILDREN WITH DOWN SYNDROME

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OBJECTIVES:

- Discuss the functional impact of low muscle tone, finger joint hyper-mobility, and (potential) visual involvement on the prehensile refinement and general dexterity of individual’s with Down Syndrome.

- Describe the relationship between communicative intent, literacy level, and handwriting readiness.

- Explore the rationale for oral motor compensations commonly seen when individual’s w/ Down Syndrome are eating and drinking.

- Explore the developmental requirements of self-care tasks that are difficult to master.
“WHAT?! MY HANDS ARE FINE!”

- **Hyper-mobile joints**: move beyond typical ROM with little effort
  - Inherent instability
  - Thumb MCP and CMC joints most vulnerable
- Short fingers
- Low muscle tone
- Visual involvement
FINE MOTOR SKILL ACQUISITION

- Early learning depends a lot on object manipulation
- Developmental ‘readiness’ apparent via the child’s interest, curiosity, self-initiated attempts
- ‘Ready’ for tool use when combining two objects in play
FINE MOTOR SKILL ACQUISITION

- Needs more guidance, verbal cuing, encouragement, and modeling to learn new skills.
- Retention of learned skills will depend on whether or not that skill is important in the child’s routine.
FINE (?) PINCER GRASP

Often use middle finger and thumb to pick up small objects (vs. index & thumb).

Pad to Pad vs. Tip to Tip pincer
Finger splay; palmer surface lacks contour
HANDWRITING

- Scribbling: early tool-use
- Representational Drawing
  - begin to understand that their drawings can represent something or someone...
- Shapes / Symbols
  - these can be labeled and combined to add meaning
- Communicative intent
  - handwriting is a form of communication
ORAL MOTOR CHALLENGES

- Hypotonia (affects tongue, cheeks, lips, and jaw too)
- Small oral cavity
- Tongue is large
- Upper respiratory infection’s and sinus problems common
- Open mouth posture common and logical, given above
COMMON COMPENSATIONS

- **Tongue protrusion**
  - Stabilizes jaw in mid-position while cup drinking (?)
  - Makes room for the bolus of food during swallow (?)
  - Most efficient / strongest pattern of movement (?)

- **Open mouth posture**
  - Along w/ tongue protrusion, improves air exchange (?)
  - Related to hypotonia / weak (?)
  - Sensory (?) Not aware (?)
  - Eventually -- a habit (?)
TYING SHOELACES

- A complicated task, requiring:
  - Coordinated use of both hands
  - Ability to sequence many steps together
    - and ‘repair’ (without starting over)
  - Good finger dexterity
  - Proprioceptive awareness (when to hold the lace tightly, and when a gentle push is enough)

- Want it to be the child’s goal
- To retain the skill – make it part of daily routine!
- Pick your battles 😊 Lots of alternatives!
ENCOURAGING INDEPENDENCE

- Focus on strengths and interests
- Investigate all potential resources / supports
- Never underestimate the value of ‘small’ jobs e.g. in your home, for a relative / neighbor
- Independence isn’t an all or none proposition – baby steps toward that goal do matter!
REFERENCES:

