



FINE MOTOR



MANAGEMENT OF UPPER EXTREMITY ATAXIA IN CHILDREN WITH ACQUIRED BRAIN INJURY

Did you know?

Approximately half of all brain tumors in children are in the cerebellum/brainstem; disturbances in the cerebellum/brainstem can cause ataxia¹. There is a lack of specific research evidence to guide the treatment and management of upper extremity ataxia in children with acquired brain injury. Therefore, all interventions should be monitored for effectiveness.

What are the best strategies for management of upper extremity ataxia?

In light of the lack of specific evidence, the following suggestions and recommendations for children and adolescents with acquired brain injury are based on clinical expertise as well as a clinical review article¹, an adult-based primary research article² and reputable health organization websites^{3,4}. These suggestions aim to assist in the management of upper extremity ataxia and to improve participation in meaningful activities. The focus should be on improving function with client-driven goals rather than addressing the underlying movement disorder.

- **Supportive Seating:** Provide seating to ensure the child is well supported in their chair/wheelchair with a desk/tray. A desk with a cut out may be useful. Feet should rest flat on the footplates/floor.
- **Strength Training:** Trial strengthening and resistive activities.
- **Weighted Equipment:** As appropriate, trial use of weighted pens, pencils, utensils and wrist weights.
- **Stabilization:** Increase postural stability and decrease multi-joint movements with the goal of improving functional performance. Trial:
 - Bracing or fixing the dominant arm against body or on table top when doing fine motor activities.
 - Grasping onto a desk or other surface with the non-dominant hand for added stabilization or using a positioning dowel or similar stabilizer.
 - Teaching adapted movement patterns



- e.g. sliding a hand across the table to reach a target versus reaching in space toward a target
 - e.g. breaking down patterns of movement from a continuous trajectory to a multi-step pattern
 - Using orthotics to stabilize selected joints
- **Adapted Equipment:** Trial use of adaptation to support functional task performance:
 - Eating and mealtimes – scoop plate, nonslip matting, weighted utensils, etc.
 - Self-care and toileting – lever taps, zip-pulls, button hooks, Velcro, toilet rails, add-on bidet, etc.
 - Computer use – trackball mouse, key guards, adjusted key stroke sensitivity settings, etc.

This resource has been developed by a team of occupational therapists at Sunny Hill Health Centre. The information included in this handout is based on current research and expert clinical opinion. Please contact your occupational therapist if you have any questions or concerns.

References

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