

Occupational therapy for hands: facilitating adults' daily living activities

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Hand function

Hand function varies considerably among persons with Rett syndrome (for example, abilities to grasp, hold and perform).

The following factors affect function: difficulty in initiating purposeful movements (*dyspraxia*), slow execution of movements (*latency*), increased or decreased muscle tone, breathing disturbances and stereotypical hand movements such as squeezing, tapping and wrinkling.

Hand *stereotypies* are common among children and adults; mechanisms behind this behaviour are still unknown. Stereotypies' intensity and expression might change over time in adults [1]. Individuals with higher gross motor function seem to more easily improve their fine motor skills [2]. Motivation and preunderstanding for a task might also affect ability to use the hands functionally.

Assisted hand movements might increase opportunities to explore and override dyspraxia (a condition that interferes with movement). Normally, children get more physical hands-on guidance/support from caregivers – compared to adults. Despite age, it's important to assist and encourage all individuals to use their functional hand skills [3].

For example, temporarily reduce hand stereotypies by carefully separating the arms; namely, gently hold one of the arms aside and support the other arm to facilitate activity. An elbow splint on one arm is useful while enabling the free arm (or hand) to be active [3]. Give manual support under the elbow, forearm or hands.

Another example is to encourage the person to place a hand on the arm of a stakeholder (family member, caregiver or medical care professional); that way, a person with Rett syndrome experiences the movement's pace and rhythm. Tactile massage (gentle, non-verbal massage – whereby the caregiver's hands gently activate touch receptors in a person's body) might reduce muscle tension and frequent hand stereotypies.

Encourage use of hands in varying contexts, with various aims, for example, to:

- Hold someone's hand for safety, closeness and friendship.
- Call for attention and contact by caressing, waving, gesturing, knocking or greeting with a handshake.
- Support and balance the body in various positions.
- Change position (pushing and pressing).
- Relax or recover by leaning on armrests of a chair or on a table – or by holding onto railings.
- Hold and manipulate things or move and place them.
- Eat and drink.
- Use tools.
- Communicate with cell phones, tablets and computers.

Provide opportunities for receiving impressions and having social contact – to enable enjoyable, motivating activities [4]. Experiencing sensory stimuli with hands is crucial. Manicures, for example, stimulate sensations in palms, on the backs of hands and in fingers (warm water, touch during hand massage and feelings from various hand products).

Enable or encourage various sensory inputs during activities such as baking, playing instruments, playing games, horseback riding and caring for a pet. Other examples are the experience of:

- Human touch.
- Rhythms and pace.
- Weight of an object.
- Varying temperatures.
- Various shapes and textures.

Stimulate participation via activities that require (i) choices/indicating preferences, (ii) conditioning/familiarisation and (iii) performance capacity [5]. During daily living, adults experience many natural situations that require participation; here, verbal, visual and manual assistance is important.

Shopping is one such activity in which manual support provides many exploration opportunities. For example:

- Place your hand under one of the person's hands, place a melon in it, and gently move that hand up and down. Then place a lightweight package in the other hand and encourage a comparison of weights – to experience weight differences.
- Move a finger over the surface of a kiwi – to experience shape and structure.
- Ask and guide the person to touch a package of frozen vegetables – to experience temperature variation.
- Offer the opportunity and then guide the person to push a shopping trolley, walk and stop – to enable rhythm and pace experiences.

Guided eating also improves involvement and participation (for example, provide manual support by holding a spoon and encouraging repetitive movements) [6].

Appropriate assessment tools are necessary to describing and evaluating hand functions and for evaluating interventions for Rett syndrome [2, 3]. In addition, because hand function varies so much from person to person, all stakeholders should collaborate and strive for individually planned interventions and regularly scheduled follow-ups.

References

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