



Occupational Therapy

The first three years of a child's life are developmentally critical as new stimulations and novel experiences rapidly drive their cognitive, social and physical growth, and moreover their brain development. If a child displays delays in achieving developmental milestones or exhibits disruptive and unusual behaviors, occupational therapy is a beneficial and effective first step toward redirecting children to an optimal developmental pathway.

Occupational Therapy (OT) is designed to assist individuals of all ages and their families in achieving their maximum potential in acquiring (or regaining) the needed skill set to perform a variety of daily activities or meaningful "occupations" and moreover participate more fully at home, school/work and in the community (American Occupational Therapy Association, 2014). Paediatric occupational therapy predominantly aims to build the developmental skills that support children in strengthening their life skills (e.g. school activities), creativity (e.g. play), and moreover thrive (e.g. self-regulation, self-care, and social interaction) in their community. Active participation of caregivers and families are immensely encouraged to helping children achieve their maximum potential. Similarly, early identification and intervention is paramount in minimizing potential secondary behavioural, emotional, physical and psychiatric difficulties that may result from children experiencing challenges with achieving their daily "occupations"

Lindsey Biel, an American OT specializing in paediatrics and founder of site Sensory Smarts, compartmentalizes the developmental issues OTs may target goals towards in their intervention work with children. These and additional treatment goals are outlined on the next page:



Attention span and Arousal level, and Self-Regulation

If a child struggles with sustaining focus, maintaining motivation and sitting still, among others, he/she will be unable to learn effectively. OT will help children harness what keeps them motivated, train a child's body to be ready to learn (i.e. keeping still, calm and alert), and in turn create effective strategies for children to use to stay on task and be an active participant in the classroom and at home. Therapeutic play is also used to introduce concepts such as self-control, cooperative play, using and understanding body language, sharing, listening, and following directions.

In demanding and sensory-stimulating environments, such as the classroom, school bus or birthday parties, children need to be able to regulate their own behaviors throughout the day. Self-calming strategies are practiced and taught to help control anxious or coping behaviors such as fidgeting or rocking, and therefore reinforcing increased attention span and focus.

Sensory processing skills and Sensory Integration

In order to develop skills and learn, a child must effectively synthesize the information streaming in from the environment through our traditional five senses in addition to two "internal" senses, body awareness (vestibular) and movement (proprioception). The vestibular system is briefly defined as the perception of movement and spatial orientation, while proprioceptive receptors allow for awareness of where our bodies fit in space, and are in turn key to maintaining our balance and coordination.

Subsequent to receiving sensory input from our own bodies and environment, our brains must then organize, integrate and appropriately interpret these sensations (Ayres, 1979). This neurological process, referred to as sensory integration, ultimately changes how we respond to changes in our bodies, the environment and in turn the way in which we interact with our surroundings and others.

Children who have difficulty in modulating sensory input and with sensory integration experience either hypersensitivity, hyposensitivity, or both to an extent that is overwhelming or impairing to function in school, home and the world. With this in mind, OTs assist children by teaching them to "organize" their body to better tolerate play and other activities without being overwhelmed or under-stimulated by their environment. Taught strategies allow children to be more engaged and empowered in play, self-regulation, interaction with others and learning by appropriately coping to distractions, textures and multi-sensory environments, among others.

Environment/Equipment

OTs may also evaluate and recommend a child's need for adaptive equipment or assistive technology to modify their environment to facilitate optimal participation in learning and development. These can range from pencil grips and fidgets to voice-activated note-taking software.

Fine motor, gross motor and handwriting skills

It is typical that while a child's small hand muscles mature, they struggle during experiences that employ their developing fine motor skills, for instance drawing, using scissors, buttoning, etc. These activities are important in giving a child opportunities to develop the strength, coordination and dexterity needed to perform increasingly complex fine motor operations, such as print and cursive writing, coloring, and keyboarding. With this in mind, OT provides strategies to improve fine motor skills such as tool use, in-hand manipulation, grasp-carry-release patterns, accuracy of reach, isolated finger coordination and sitting posture, in order to achieve their potentials in occupations employing this skill set.

Handwriting skills, from letter formation to efficiently taking class notes down legibly, can also be extremely tedious and difficult for some children to adopt quickly. OT effectively facilitates improvements in the fine motor skills needed to improve handwriting legibility and performance (e.g. Case-Smith, 2002).

Activities concerning the use of our larger muscles, such as throwing and catching a ball, climbing stairs and playground equipment, require the optimal development of gross motor skills. Therapy helps improve the fluidity and execution of these motor skills as specialists teach children strategies targeting motor coordination, motor planning, body awareness and strength.



Useful Links

www.sensorysmarts.com
www.chilmind.org
www.sensoryintegration.org.uk
www.aota.org

Activities of daily living (ADLs) Self-care Skills

As children grow older, they strive and are driven to become independent in various daily activities and tasks, from dressing, toileting, hygiene and bathing skills to drinking from a cup and eating with utensils. OTs help children develop and master these age-appropriate skills so that they can confidently participate in everyday situations.

Cognitive and Visual-perceptual skills

From doing puzzles to understanding geometry, a child must develop their ability to perceive and interpret relationships between objects within their environment.

OT interventions can improve memory, planning, problem-solving, time management, and organization skills, which are supplemented and maintained with self-monitoring strategies. Visual-perceptual skills, including visual discrimination, visual memory, visual form constancy, and visual figure ground, are heavily utilized to carry out dynamic fine motor sequences and cognitive operations. Moreover, OTs teach a child to form a mental map of how the world works and where they fit in it, all of which are essential to feeling physically and emotionally secure (Sensory Smarts).

Complimentary to individual OT sessions, group intervention programs can further facilitate treatment gains within a guided and structured social setting. Interventions such as Kindergarten readiness, ALERT Program® for Self-regulation, Sensory Motor Development and Social Skills, to name a few, incorporate several therapy domains described above, and moreover enable therapists to assist appropriate integration into peer groups.

With this in mind, children with a wide range of diagnoses and difficulties would benefit and may be, in turn, recommended occupational therapy, including:

Autism Spectrum Disorder (ASD; Schaaf et al., 2014)

Attention-deficit Hyperactivity disorder (ADHD)

Traumatic brain injury (TBI; Phipps & Richardson, 2007)

Developmental delay

Learning disabilities (e.g. Humphries et al., 1992)

Developmental Coordination Disorder (Polatajko et al. 2001)

Cerebral palsy, multiple sclerosis, and other chronic illnesses

Bibliography

Case-Smith, J. (2002). *Effectiveness of school-based occupational therapy intervention on handwriting. The American Journal of Occupational Therapy, 56*, 17-25.

Humphries, T., Wright, M., Snider, L., & McDOUGALL, B. E. T. H. (1992). *A comparison of the effectiveness of integrative therapy and perceptual-motor training in treating children with learning disabilities. Journal of Developmental & Behavioral Pediatrics, 13(1)*, 31-40.

Phipps, S., & Richardson, P. (2007). *Occupational therapy outcomes for clients with traumatic brain injury and stroke using the Canadian Occupational Performance Measure. American Journal of Occupational Therapy, 61(3)*, 328-334.

Polatajko, H. J., Mandich, A. D., Miller, L. T. & Macnab, J. J. (2001). *Cognitive orientation to daily occupational performance (CO-OP): Part II- The evidence. Physical and Occupational Therapy in Pediatrics, 20*, 83-106

Schaaf, R. C., Benevides, T., Mailloux, Z., Faller, P., Hunt, J., van Hooydonk, E., ... & Kelly, D. (2014). *An intervention for sensory difficulties in children with autism: A randomized trial. Journal of Autism and Developmental Disorders, 44(7)*, 1493-1506.