



Skills on the Hill, LLC

Pediatric Occupational Therapy Services

201 8th St., NE, Suite 301

Washington, DC 20002

Phone: 202-544-5439 Fax: 202-379-1797

What is Occupational Therapy?

“Occupational therapy is a health profession concerned with improving a person’s occupational performance. In a pediatric setting, the occupational therapist deals with children whose occupations are usually players, preschoolers, or students” (A Parent’s Guide to Understanding Sensory Integration, 1986).

“Occupational therapists use a knowledge base of neurology, anatomy, physiology, kinesiology (the study of muscles), child development, psychology, psychosocial development, activity analysis, and therapeutic techniques. They are trained to treat clients holistically, addressing their cognitive, emotional, and physical needs through functional, activity-based treatment. When working in pediatrics occupational therapists select activities that are of interest and have meaning for children, and that also meet therapeutic goals” (The *Alert Program for Self Regulation, How does your engine run?*, 1992).

The developmental progression of an infant to toddler:

Prone (on the stomach) ► Pushing up on the forearms/neck extension ► Rolling from stomach to the back and then, shortly thereafter, the back to the stomach ► Sitting unsupported ► Moving around by alternating between sitting/extending arms/side sitting/scooting ► Holding quadruped (on all fours in preparation for crawling) ► Crawling (THIS IS SO IMPORTANT EVEN THOUGH A PEDIATRICIAN MAY SAY IT IS OKAY TO SKIP CRAWLING) ► Pulling to stand ► Cruising by holding on and side stepping ► Standing ► Walking!

- Through contraction of the trunk muscles, we are able to maintain static positions such as standing and sitting upright.
- Through contraction of the trunk muscles, we are able to make subtle postural shifts to maintain balance when we are still and when we are moving such as when running, hopping, or walking along a balance beam.

What is muscle tone?

Muscle tone is not the same as strength. Muscle “tone” is the muscle’s readiness to activate upon rest. This correlates with the ratio of “fast” and “slow” twitch fibers in an individual muscle. The more fast twitch fibers in a muscle, the higher the tone the muscle has. The more slow twitch fibers a muscle has, the lower the tone the muscle has. We cannot control the type of tone we have, we inherit it.

- Low tone is called hypotonia. High tone is called hypertonia.
- When children have low tone, they may have trouble enduring static positions over time. You will see fidgeting, leaning, and propping because muscle groups are getting tired. The person moves to alternate the muscle groups being used.

Stability enables mobility

Stability is needed through the trunk so that the arms and legs can move in a smooth and controlled manner (this is how walking occurs). Within each extremity, there must be stability within a joint in order for controlled movement to occur beyond that joint (further away from the trunk).

- So for a child to be able to handle a pencil and to be able to draw a circle: the trunk needs to be stable (contraction of trunk muscles), the shoulder has to be stable (contraction of the shoulder girdle), the forearm must be stabilized against the writing surface, and the wrist needs to be stabilized in a slightly extended position in order for the finger muscles to move the pencil.
- When children have low tone, their ligaments are often loose. You can sometimes see hyperextension in joints (bending the knees/elbows/fingers backwards, being double-jointed) or awkward “fixating” patterns (locking the joints such as when a child “w” sits). They have trouble with achieving stability at joints and through the trunk in order for movement to occur smoothly. As a result, we may observe problems with gross motor and fine motor skills. ***** *Not all motor skill difficulties are due to low muscle tone* *****

How do visual motor skills develop?

Drawing & Writing

- ▶ Grasping a crayon/marker in a fist to scribble or make marks
- ▶ Child begins to imitate lines and demonstrates more control
- ▶ Grasp becomes more mature as fingers point toward tip
- ▶ Child begins to imitate a circle
- ▶ The arm begins to stabilize itself against the table so the hand can move separately from the arm
- ▶ Grasp becomes even more mature as the grasp develops into an actual “tripod”
- ▶ Child learns to trace forms, form diagonal lines, and intersecting lines
- ▶ Child begins to identify numbers and letters and then traces them or connects dots
- ▶ Child begins to form shapes, letters, numbers from a model (no longer tracing), can copy name and then able to form it without model through repetition
- ▶ Child begins to form letters and numbers without a model

Cutting

- ▶ Experiments with holding, needs adult assistance to snip paper
- ▶ Begins to learn to open and close independently
- ▶ Snip on his/her own
- ▶ Demonstrates enough control and coordination to cut a straight line
- ▶ Begins to control/steer paper with non-dominant hand
- ▶ Begins to cut curves