

Brain Development Basics

Babies are born with an intact brain, however, it is not yet linked up. There are very specific experiences that the baby must have and movements she must do in order to make the neural connections for proper development.

At birth, the brain stem is what is mostly functioning and developing. This part of the brain is in control of automatic functions such as breathing, heart beat, and digestion.

Another brain stem function that of which most people are unaware is that it controls the primitive reflexes. These are reflexes which develop either in the womb or shortly after birth, and help the baby learn to move and develop more complex motor patterns. These reflexes are activated by some kind of stimulus, either a head movement, touch, light, sound, etc.

When babies move in a reflexive way over and over, or when they engage in specific rhythmic movements, they integrate that reflex, thus having control over that motor pattern. This integration of reflexes helps to further develop and mature the brain stem and causes it to make neural connections to higher up areas of the brain.

Babies also need a lot of outside stimulus, such as light and deep touch, movement, sound, sight in order to ensure proper brain development.

When babies are prevented or otherwise unable to move or receive the appropriate stimulation, such as a prolonged hospital stay after birth, they are at high risk for developing learning and behavior disorders.

If your school-age child is experiencing difficulties in school with learning or behavior, it is likely that have unintegrated reflexes and a need for more sensory input than he is getting.

Nutrition

A few of the basic nutrients that are important for brain development are: DHA/EPA, D3, Zinc.

Today's environment is very toxic and it is nearly impossible to avoid such toxins. Make sure you are feeding your child clean, organic foods. Store foods in glass containers and never use the microwave to re-heat foods.

Gluten and dairy are very highly correlated with learning and behavior problems and may need to be avoided. Artificial colors, additives, preservatives, and sweeteners, as well as MSG, high fructose corn syrup should never be in your child's diet. Be aware that these products can have hidden names.

If you are interested in learning more about primitive reflexes, rhythmic movements, or how to help reverse learning or behavior issues in your children, please contact me.



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Reversing Learning Challenges

What you must do **now** to help your struggling child succeed at school



Whole Child Learning and Wellness

Sensory Stimulus

Children must receive a variety of sensory stimuli in order to create neural pathways from the brainstem to the rest of the brain. Encourage exposure to as many simultaneous sensory experiences as possible.



Tactile

- The back, face, palms and bottom of the feet need stimulation from a variety of textures, such as grass, pebbles, sand, brushes, and carpet

Proprioception (body awareness)

- Massage / deep pressure on torso, limbs and skull
- Wiggle and gently pull and push on the fingers and toes and other joints

Vestibular (contributes to balance and spatial awareness)

- Swinging
- Spinning
- Rolling
- Balancing on beam

Auditory

- Sing, talk, and read to your child
- Play classical music, especially Mozart

Visual

- Playing catch to help with near-far vision
- Child follows the beam of a laser pointer on a wall across the room that you are moving without moving his head

Primitive Reflexes

Virtually all children who struggle have unintegrated reflexes, usually several. The thinking parts of the brain will then need to be used to compensate for what should be taken care of by the brain stem. Some of the common reflexes that are unintegrated are the moro, babkin, spinal galant, and babinski.

Moro: Hypersensitivities to sound, light/vision, touch, & head movement

Babkin: Child sticks out tongue or uses mouth when cutting or writing

Spinal Galant: Movement of hip when stroked near spine in downward position. This makes the child fidgety.

Babinski: Stroke the side of the foot and if toes should fan out it is unintegrated. This makes the child feel ungrounded.

Rhythmic Movements

Babies naturally use rhythmical movements in order to help integrate their reflexes. These movements can be done passively (done to the child) or actively (done by the child). Passive and active movements stimulate different parts of the brain.

Significant brain connections can be made with small amounts of precise movements.

Eye tracking



Problems with eye tracking often accompanies reading and other learning problems and indicate issues in the brain stem, cerebellum, and/or frontal cortex. Eye tracking problems include near/far, binocular vision, smooth pursuits, and saccades. Integrating primitive reflexes can help resolve eye tracking issues.

Midline

The inability to cross the midline shows a lack of communication between the hemispheres. Rather than reaching across their body to grab an object, they will grab on the same side and hand it off to the other hand. Activities that strengthen the midline are: two handed drawing, cross-crawling, and monkey bars.