

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.

It can be hard to tell if your toddler is on track for proper development, but small delays now could mean big delays later. The information contained in this brochure is critical for all caregivers to understand and implement today.

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.

If your child starts to experience digestive or skin issues, then it is imperative that you examine his or your food sources, especially gluten and dairy. Pathogens are also common GI disruptors that may need to be tested through specialized labs.

If you are interested in learning more about primitive reflexes, rhythmic movements, or how to help promote brain growth in your children, please contact me.



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Preventing Learning Challenges

What you must do **now** to help your toddler develop correctly



Whole Child Learning and Wellness

Sensory Stimulus

Young children must receive a variety of sensory stimuli in order to create neural pathways from the brainstem to the rest of the brain. Do these following sensory exercises while holding, changing, bathing, or playing with your toddler.



Tactile

- Gently stroke or caress your child, especially on the back, face, palms and bottom of the feet

Proprioception (body awareness)

- Massage your child
- Gently squeeze head, body, and limbs
- Wiggle and gently pull and push on the fingers and toes and other joints

Vestibular (contributes to balance and spatial awareness)

- Rocking in different positions
- Tipping child over head down
- Turning while holding your baby (in both directions)
- Gently turn head side to side

Auditory

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

Visual

- Move toys in Visual View from one side of the body to the other and encourage grabbing of objects on one side of the body with the opposite hand
- Use flashing color lights in visual view

Rhythmic Movements

Babies use rhythmical movements in order to help integrate their reflexes. In your child, these may not be fully integrated, so you can assist during play.

- Gently slide your child on his back by pushing the feet.
- While lying on his back, move his legs like windshield wipers (both legs out and then both legs in, touching the toes when moving inward).
- While lying on the stomach, gently move his bottom side-side

Primitive Reflexes

The majority of primitive reflexes should be integrated by 2 years old. Reflexes that have not integrated can contribute to learning and behavior problems later. Here are some reflexes you can check.

Rooting: stroke cheek from mouth towards ear. Movement of the mouth on that side means it is unintegrated.

Babkin: Press on palm with your thumb. Any movement in the mouth or tongue means it is unintegrated.

Babinski: stroke the side of the foot and if toes should fan out it is unintegrated.



Crawling Links the Brain

Some babies like to go from scooting to walking, but crawling is a very critical stage. Studies have shown that babies need a good 6 months of crawling to get the right and left hemispheres of the brain to work together. If your child was an early walker, play games with him daily that encourage him to crawl.

Get Outdoors



One of the biggest contributors to learning issues in children is the lack of outdoor play. Have your child walk barefooted on different surfaces, climb trees, roll down a grassy hill, and pick up small bugs. Taking him to the park often helps with vestibular, balance, and visual development as well as socialization.