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.

The integration of primitive reflexes will help develop muscle tone and lead to head stability, which will lead to eye stability and balance. Next comes

Teacher Course

If you want to learn everything you can do in your classroom to promote brain development and help reverse learning challenges of your students, you will want to take my course, ***Why Are My Students Struggling? Increasing academic performance through targeted brain development techniques.*** This course is registered with USD eligible for 2 semester credits.

This course is designed for the classroom teacher, specialist, and those who work with children in a large group, small group, or individualized setting. As a result of this class, the teacher will be able to appropriately adapt the learning environment to adequately meet the individual learner's needs.

https://courses.wholechildlearningandwellness.com/

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

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Reversing Learning Challenges

Understanding brain development so you can help your struggling students succeed in school

Brain Development Basics Con't

reflexive eye movement, which will contribute to the development of the midline and left/right sidedness. Auditory & visual processing, rhythm & timing, memory, and other cognitive pathways will then come online as the connections between the limbic system and frontal lobe develops. At this point academics can be addressed.

If your students are experiencing difficulties in school with learning or behavior, it is likely that areas lower down in the brain are immature and need addressing. If these gaps are significant, then no matter how much you try to teach reading, for example, it might not be able to click.

Trying to teach reading to a 4 year old with an immature eye system can actually be harmful. Young children (pre-k, k, and 1) need a lot of sensory experiences to help develop the brain stem and to stabilize the eyes.

Do this simple experiment. Have your students standing and do cross crawls. This is a march where they touch their hands or elbows to the opposite leg. Lead them and observe. You will surely notice that your struggling students will start by touching their same side leg, a sign of being stuck in an earlier developmental pattern.

Overwhelm

When children are easily overwhelmed, the RAS in the brainstem is not appropriately filtering out stimuli. It is important that they have a calm area in the classroom they can safely go to so they can relax. Once they are overwhelmed, the blood supply to the thinking parts of their brain is cut off.

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, STNR, ATNR, 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 & hyperactive

STNR: When head is up, the legs flex, and when head is down, legs extend. Makes copying from the board difficult and sitting uncomfortable.

ATNR: linked to dyslexia and learning disorders

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 accommodation (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 midfield are: two handed drawing, cross-crawling, and monkey bars.