FOOD FOR THOUGHT

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A journey into brain development can help us understand early development and the best ways to S-T-R-E-T-C-H the possibilities of our children.

- The newborn's brain contains about as many neurons as there are stars in the Milky Way. When a baby is born, the brainstem that controls automatic reflexes is completely wired. The baby has only slight awareness of the sensory world.

- The "wiring" is set up in temporary circuits to get experiences "jump started" while waiting for full sensory experiences to fine tune the brain's connections.

- Shortly after birth, an explosion of trillions of connections occurs – far more circuits than necessary. By age 2, the child's brain has twice as many connections and uses twice as much energy as the adult brain.

- Rich, clear, repeated, multisensory experiences strengthen brain connections. The most important time for these experiences is the first year of a child's life.
    - Around 2 months of age, motor centers have developed sufficiently to allow the infant to reach out and grab a rattle.
    - Near 4 months, depth perception and binocular vision develop.
    - Speech centers are prepared to produce the child's first words at age 12 months. Much of this is due to the high-pitched, short, melodic speech used by the adults when speaking with infants.

- The brain is very plastic due to the expanse of it neurons and connections. Fetuses that have been exposed to toxins, brain damage or genetic makeup that causes clear learning differences can have their brain connections reworked and brain chemicals stimulated through carefully designed experiences (i.e., children with autism being exposed to ABA, neurodevelopmental therapy, etc.).

- The child's mood must be kept open through safe, secure environments to maximize brain connections. Children in depressed circumstances are at risk.

- By 3 years of age, children who have not had multiple, rich experiences are at risk of having smaller brains than children who have been exposed to strong learning environments.

- Unused circuits are pruned or removed. Around 10 years of age, pruning begins in earnest.

- The brain remains quite plastic until around age 18, but it is never too late for new learning to occur.