

Building a Baby's Brain

review by Katherine Duff

Raise a Smarter Child by Kindergarten: Build a Better Brain and Increase IQ by up to 30 Points

by David Perlmutter MD, FACN and Carol Colman

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We all know that babies arrive with work still to be done. Skulls need to close, and heads need support. However, many new parents may not be aware of the construction project that is going on inside their child's brain and the impact their involvement will have on the formation of that brain. Neurologist David Perlmutter, MD, FACN, and co-author Carol Colman have written an enlightening book, *Raise a Smarter Child by Kindergarten: Build a Better Brain and Increase IQ by up to 30 Points*, that teaches parents how they can give their children the best opportunity for developing a facile, creative mind.

The basis for enhancing optimal development of the brain begins with an understanding of the physiology, which the authors explain very well. We learn the old notion that we are born with the brain we will have for life has been replaced with the knowledge that the brain we are born with is unfinished. At birth, the brain has 100 billion brain cells, or neurons, that are not able to communicate with each other very well. Communication is established when neurotransmitters are sent from one neuron to another, creating a synaptic connection. Neurons also grow branches, or dendrites, that will increase the surface area for even more synapse formation. By the time a child is three, there may be as many as 100 trillion synapses.

The authors compare this mass of synapses to an overgrown garden to describe the next step in brain development. With so many synapses, the brain is, on the one hand, preparing for effective mental activities and, on the other hand, bogged down by the volume of synapses. The brain then begins synaptic pruning that sheds unused synapses and strengthens those that are used. Repetition of experiences is one way that synapses are strengthened.

Genetic inheritance was once thought to be the determinant of intelligence in a child, but that notion too has been refined with current knowledge. The authors describe the genes as being in a dynamic relationship with environmental influences that can turn a gene on or off, affecting the brain's development. A good environment can turn on good genes; a bad environment can turn on bad genes or prevent good genes from being activated.

Another factor in brain performance is determined by the formation of myelin, the fatty substance that covers the nerve cells in the body. Myelin makes the brain faster by speeding up electrical impulses through neurons. Environment affects myelin formation as well. For example, research has shown that children who have received love and nurturing have greater myelin formation.

Having established the groundwork for understanding physical brain development in Part I, Perlmutter and Colman devote the rest of the book to teaching parents how to intersect that development in ways that will enhance intelligence and creativity – and it is remarkably easy to

do. Among the many topics covered are diet, stimulating play, music education, proper use of television and computers, and avoidance of toxins in the environment.

Nutrition should begin with breast-feeding for a full year when possible, but directions are given for formula-fed infants and children over age two as well. The vital nutrients include the fat docosahexaenoic acid (DHA), which is an omega-3 long-chain polyunsaturated fat that constitutes 25% of the fat in the brain. The best myelin is formed from DHA. Another fat that should be included is arachidonic acid (ARA), which is the principal omega-6 fatty acid in the brain. Other brain-boosting nutrients include adequate levels of iron and iodine. For the breast-feeding mother, it is understood that the mother's nutritional status should be optimal, since breast milk is only as good as the mother's diet.

In the authors' discussion of stimulating play, parents will find a departure from the expected recitation of information and drills, because the goal of this effort is to teach the child how to think, not what to think. Creativity, rather than academic performance, is the foundation upon which the child will build advanced thinking. With that in mind, Perlmutter offers several examples of games as well as instructions for constructive use of television and computers.

The book also informs parents about negative environmental influences that can damage neurons. Foremost among those influences may be the toxic chemicals the child is exposed to from the point of conception. Even at birth, a child's immune and reproductive systems are not fully developed, and their bodies are not able to detoxify many toxins. The authors discuss several exposures that should be avoided, as they can negatively affect neurological development and result in lowered IQ.

Another possibility for damage may come from the vaccination of children in too short a time span. Here, the authors offer a vaccination schedule that should reduce the neuron-damaging cytokine-surge that results from too many vaccinations administered at once.

The authors state that there are about 30 IQ points up for grabs after a child is born. *Raising a Smarter Child by Kindergarten* offers the latest knowledge and resources available to parents, so they can help their children realize the full potential of those 30 points. Parents who want to make the most effective use of their time and give their children the best opportunity for intelligence should consider this book a must-have for their library. ♦

Advances in neuroscience have revealed new insights into the development of the human brain. There are many influences on the development of a child's brain, and some of those are under the control of the parents. An appreciation for the current understanding of brain development will help parents make wiser choices that can enhance their child's intelligence and creativity.

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