

“Challenges and Changes”

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An Approach to Remediation

Several times *over* the last year, I have been asked to explain the general approach that I use as a neurodevelopmentalist. I have written several articles on different aspects of my approach but have not given an overall picture of it. This month I will attempt to do so.

The very foundation of the neurodevelopmental approach is an understanding of the brain structure and capacity. The newborn child possesses all the brain cells he will ever have. These brain cells are not replaced if they are injured or die. The brain has approximately 100 billion cells (accounting for approximately 3% of the brain mass), and 100 trillion connections (97% of the brain mass).

God has perfectly designed the container here—the more you put in, the more the brain will hold. There is generally more than one area of the brain that can assume the same function, and the brain is able to modify its structure and its performance in response to the environment.

The increase in the weight and size of the brain of a maturing child is due to the production of connective tissue. Stimulation increases the number of connections within the brain, and, as these increase, so does the efficiency and organization of the system. The endless variety of specific stimulation accounts for the great differences among individuals in the development of the sensory pathways, motor pathways, and function.

Function, then, is a reflection of how well the brain is organized or how efficient it is in taking in information and using it. Function can be greatly reduced if the brain does not receive the stimulation and opportunities that enhance its production of connective tissue. At any time in the life of a child, the process of neurological organization can be stopped or at least slowed by injury or environmental deprivation. But the process can be greatly increased and enhanced by carefully planned activities that stimulate connective tissue production.

How then do we go about approaching the planning of specific activities that will ultimately lead to neurological organization? One of the tools of the neurodevelopmentalist is a developmental profile against which we can evaluate the present function of an individual (child or adult). We look at and evaluate the receptive areas of tactile, auditory and visual competence, as well as the expressive levels of language, fine motor competence, and gross motor skills. Thus we know where a person is functioning as each level of development is identified from birth to the accelerated or mastery level. We can then identify the next specific step in the child's development and proceed to provide the child with specific activities or input to accomplish that next step.

The function or lack of function we observe is so rooted in development that as development progresses, function improves. We can prompt the development to occur by using specific stimulation with appropriate frequency, intensity, and duration. These are the keys to change for the neurodevelopmentalist.

Stimulation needs to be specific for development to occur. A brightly colored and vividly decorated preschool room may be stimulating, but without direction to specific activities, the stimulation is random rather than specific. The stimulation needs to be specific to the skill needed or connections to be made to improve function.

Frequency refers to how often the child will participate in that specific activity. The more frequently one addresses the activity, the more frequently the brain must also address the new stimulation. Thus, it is more likely to effect changes within the brain and for learning to occur.

Intensity refers to the strength of the input during the activity. I feel that it is by far the most important of the three, yet is the most difficult to maintain. I have found myself pushing on to “finish” when intensity has dropped to zero, and realize that I'm not going to get productive or positive results if I

continue. We may be able to make a child stay in one place for an extended period of time (duration) while we go over and over the material (frequency), but the child has much control over the intensity of the input. If the child is “turned on” he learns rapidly; if “turned off”, learning may never occur.

Duration is the length of time of input. We try to keep the times of input short so that the child will respond positively to the more frequent and intense times of activity. Activities of long duration are counterproductive.

The processing skills of children are very important. If processing skills are low, children often do not discriminate the sounds of phonics and although they are being taught phonics, they LEARN to sight-read. These same children are often impulsive, as they do not always connect effect with cause until after they have carried out their impulses. They are sometimes socially immature and do not always fit in with their peers - they are not aware of “personal space” don’t read body language, and don't understand all the aspects of humor so do not “get” the jokes told in groups. They are often on the outside, looking in when in their peer groups, but will often interact very well with younger children. For further information on processing skills, see the May/June '99 issue of the Informer.

Hemispheric dominance is another important factor in helping children with the neurodevelopmental approach. Dominance refers to having one hemisphere of your brain that is in control. In order to have dominance established, you need to have a dominant hand, ear, eye and foot on the same side of the body. If your child is cross dominant or mixed in dominance, he will have a great deal of trouble with long-term memory. The dominant hemisphere is where logical and analytical thought is. When a child is working in his subdominant hemisphere, when something happens, his reaction is going to be emotional rather than logical or analytical. To read more about dominance as an issue in learning, see the Sept/Oct.'97 issue of the Informer.

We believe that parents are the most effective teachers and are the experts on their children, so they are an integral part of any evaluation. Their observations and insights are invaluable in determining how to remediate any learning inefficiencies. For children who are not learning well under their present circumstances, that is not in any way a reflection of their potential. It is, rather, a reflection of the inefficiencies they have today.

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