## How Does Therapy Work?

Research has shown that when a child performs an activity regularly and repeatedly, small changes occur in the thinking pathways of his brain. In all areas of development—communication, cognition, socialization, learning to take care of himself, and getting around—the child sees objects and events, and hears the words used to refer to these, creating pathways in the brain between and among the input (sensory) systems. Every time the child hears, sees or feels something the information is sent to different areas of the brain which then interact with each other so that slight change anywhere in the brain will cause a change throughout the entire brain. A child's brain constantly reorganizes and fine-tunes itself, creating expanded or refined systems. When these systems are integrated, the child learns; when not, the child loses interest and walks away. Thus, for a child to change, the therapy and the language the child hears with it, must be tailored to fit the child's developmental ability, his readiness to learn.

Language has many levels: speech sounds, words, grammar, syntax, and pragmatics (social use of conversation). These language levels are integrally connected to each other, and all must be addressed in therapy, even if therapy is designed to target only one level of language. The child must have a reason to communicate and a partner with whom he can communicate (pragmatics); he must have an idea which is represented symbolically by a word or words (semantics – word meaning) in a sentence or pre-sentence (syntax - word order), and finally he must be able to express it in a way that the message will be understood by his listener.

When we work with a speech/language or motorically impaired child, we strive to work at his optimum developmental levels so that he will remain interested and engaged. A very young child will be attracted to routines with real objects or life-sized toys that look similar to the actual objects in his life. When he takes an object in his hands, he feels and manipulates it. He plays with these objects—pots and spoons, water, dirt and sand—repeatedly. He learns the names of these objects and he begins to learn how to use other symbols of these objects, including signs, pictures, and written words. For some very young children, abstract materials, even pictures of these objects, cannot activate the existing thinking pathways in their brains, for others, line-drawn pictures to represent these objects may be outside of their cognitive reach and will not keep them interested and participating. The adult adjusts the input with the child, using real dolls and toy trucks with the youngest child and pictures of dolls and trucks with the older child. The adult can present line drawings to still older children, who finally learn how to read.

Besides matching symbols to the child's level of what he is experiencing and learning, the activities and objects we present must be familiar to the child. It does not help a very small child who has never planted a seed in dirt and seen it grow up into a plant, to hear about seeds planted in dirt and how they grow up into plants. While pasting together a paper seed and a paper flower may fit a child's motor skill development, if he has not worked alongside you in the garden and learned about seeds, or planted seeds in cartons in the clinic, it is not relevant to present books about how seeds grow into plants. Our goal in therapy is for the child to talk on his own about things that matter to him. Eventually, he learns how to adjust his spontaneous language use to the needs of the listener, but starting out, very little children, mostly need/want to talk about

things and events in his environment which occur in day-to-day routines which he shares with you, simple things, like the slippery soap in the bathtub, the ice cubes in your ice tea at lunch, or the cutting of an apple for a snack. Shared routines with the appropriate language input minimize the cognitive distance between the child's sensory experience and the ongoing social talk. That is, the activities and language the adults use with the child closely match the information and experience he knows and is familiar with, allowing new material to build on his existing knowledge and be assimilated into his system.

So for the youngest child, labeling new objects and experiences is enough, e.g., "apple," whereas for the older child, more complex language may be used, e.g., "[a] is the sound that comes at the beginning of "apple." Your 2-year-old will enjoy the phonics oriented song, "Apple, Apple a a a" (from *Sounds Like Learning*, Barbara Milne) with hand motions, but he will be focused on the hands. Later, when he comes to understand that those hand motions symbolize objects, words develop. The child who understands sound-symbol associations is getting ready for kindergarten and is the most receptive to singing and doing the hand motions of this wonderful song.