

## TACTILE SYSTEM

The tactile system or touch system refers to stimulation reaching the central nervous system from receptors in the skin. Since there are 14 to 18 square feet of skin covering the adult body, it is obviously a large source of incoming information. Add the fact that there are dozens of each of three major types of receptors on every square inch of skin, and the possibilities for input are huge! The most primitive type of receptors register light touch, like a feather being brushed over the skin. Light touch is a primitive, but still powerful alarm system. There might be an insect crawling on me, or someone sneaking up on me; I need to look and see - I can't pay attention to anything else until I know what is touching me, or might touch me!

The second type of receptors are for pressure touch, known as discriminative touch. This is much more important for learning than we realize because we do not have to look at or think about what our fingers or feet are pressing against; we recognize the "feel" of things. Sustained, or pressure touch also has an important role in countering or subduing alarm and anxiety. When a baby is fretful or over-stimulated, wrapping in a light blanket, - applying pressure touch, in other words, - usually results in his falling asleep.

The third set of skin receptors register heat, cold, and pain. Obviously it is important for survival that these receptors work efficiently, and that their input is organized and processed quickly so that appropriate action can be taken.

When the nervous system is immature, when development is delayed, problems occur which can be directly related to immature registration and processing of input from the skin. The connection between the skin and the nervous system is not strange. The nervous system is formed from the same layer of embryonic tissue as the skin. The most common symptom of immaturity is excessive sensitivity to light touch. The individual may describe feeling as if the skin had been rubbed raw where he/she was touched. The infant avoids being touched, cries when picked up, avoids being washed or shampooed. Parents feel rejected, and the stage is set for

emotional problems added to the original sensory difficulty. Feeding problems often result because extreme sensitivity in an around the mouth leads to rejection of the nipple, and later to rejection of many foods.

Unfortunately, hypersensitivity to light touch is often accompanied by lack of normal sensitivity to heat, cold, and pain. The child may refuse to wear a jacket in the winter, and refuse to take it off during the hot summer. He may not cry at injuries that would make another child scream.

The contribution of tactile defensiveness to attention deficit disorder is one of its most common manifestations. The child who is constantly on the alert because something might be moving toward him, - might touch him - cannot attend to what the teacher is saying. The tactile system's connections with hearing and vision means that hyper-alertness extends to other stimulations as well. The tactually defensive child often reacts reflexly by striking out in response to another child's well-meaning touch. This is labeled "aggressiveness", and one label leads to another.

The therapists' strategy in dealing with tactile defensiveness is two-fold. First, it is important to protect the child as much as possible from sudden and unwanted touch. Secondly, various kinds of activities utilizing sustained pressure can be used to dampen down the over-reactivity.