

Psychologist Philip Teitelbaum, a Graduate Research Professor at the University of Florida, is researching early signs of autism in infants with the ultimate goal of enabling children to begin treatment for the disorder early enough to curtail and possibly even reverse its effects.

According to Professor Teitelbaum, autistic children learn to sit up, turn over and crawl in noticeably different manner than normal children. He believes that this difference in movement is caused by the same wiring problem in the central nervous system that later causes the social/verbal symptoms commonly associated with the condition. Since Teitelbaum's research indicates it may be possible to detect these movement problems at three to six months of age, autistic babies may soon be able to receive early treatment therapies during crucial brain development (zero to two years of age).

Several years ago, while studying a gait disorder commonly found in patients suffering from Parkinson's disease, Dr. Teitelbaum attended a talk that changed the focus of his research when a colleague, Dr. Ralph Maurer, delivered a paper on similarities between the way Parkinsonian adults and autistic children walk. Teitelbaum's curiosity was piqued, and after he and his wife, Osnat, a movement analysis expert, examined videos of autistic children, they felt sure that a movement disorder was indeed a key component of the condition.

Next, the Teitelbaums obtained from parents 17 videos of infants who were later diagnosed as autistic. The Teitelbaums taped key parts of these videos--the children attempting to master developmental milestones like turning over, walking and crawling--on a optical disc recorder, which made careful, blur-free, frame-by-frame movement analysis possible. Using footage of 15 "normal" babies as a control, they examined and documented the children's movements using Eshkol-Wachman Movement Notation (EWMN). EWMN is a general analysis system in which spherical coordinates are applied independently to each segment of the body. By distinguishing between which segments are actively moving versus those that are being carried passively along, a deeper understanding of abnormal movement is possible.

The results of their analysis were astounding. Every single autistic child demonstrated at least one movement disturbance by six months of age. The group published an article in the November 10, 1998 issue of the Proceedings of the National Academy of Sciences detailing their findings. Osnat, who studied EWMN with the Noa Eshkol in Tel Aviv for 20 years, points out that this is the first time EWMN has been used in a medical diagnostic context. "It's a pioneering use of the technology," she says, "and may eventually prove useful in the diagnosis of other developmental disorders."

Using segments of video, Teitelbaum can demonstrate that among other things, autistic babies have difficulty supporting themselves to crawl. In an ineffectual attempt to move forward, they may rest weight on their elbows and forearms, dig

their toes in and lift their rumps. Or, struggling to pull themselves along, these babies might leave one arm underneath the torso while attempting to crawl with the free arm or may crawl atypically, with one leg stepping while the other leg moves normally. Similar movement problems are seen earlier in turning over and later in walking.

Moebius mouth (flat lower lip and arched, oval shaped upper lip) is also present in a number of the children the Teitelbaums observed on video. According to Dr. Teitelbaum, not all autistic children have this feature, but when a child does have it, it's a possible indicator of autism. And since the condition is noticeable in autistic infants as young as one month old, moebius mouth may prove to be one of the very earliest signs of the disorder.

Professor Teitelbaum is pioneering a more extensive study into early diagnosis and needs additional early home videos of children (0-18 months) later diagnosed with autism. For more information, please call (352) 392-0615, e-mail Jennifer Nye [nye@psych.ufl.edu](mailto:nye@psych.ufl.edu) or write Dr. Teitelbaum at Campus Box 112250, UF, Gainesville, FL 32611.