

# Biomedical/Education Update:

## Eye tracking: clue to social deficits?

Abnormal eye movements are a hallmark of autism (see cover story), but research by Larry Siever points to a link between defective eye-tracking skills and social impairment even in *non-disabled* individuals.

In a new book, Siever describes how he and his colleagues asked student volunteers at a community college to watch a pendulum while their eye movements were measured. After studying about 300 subjects, the researchers selected the 20 who were most accurate at the task, and the 31 who were least accurate. Other researchers, blind to the results of this test, interviewed these subjects about their personal lives, and administered batteries of psychological, neurological, biochemical, and psychophysiological tests.

"At the end of the study," Siever reports, "when we unsealed the initial eye-tracking data, the results were astonishingly consistent. Individuals with poor eye-tracking were more likely to be isolated, have few friends, date infrequently, and have difficulty establishing rapport with others." Furthermore, he says, the severity of social impairment directly correlated with the severity of impairment in eye-tracking.

Subjects with poor eye-tracking skills, Siever says, seemed "to be in a kind of bubble that insulated them from others," and often showed very poor eye contact during the interviews. In addition, subjects with impaired eye-tracking had poorer coordination and scored lower than good trackers on tests involving reaction time or sustained attention. However, the subjects (who appear similar in many ways to individuals with Asperger syndrome, a form of high functioning autism), did not exhibit behavior problems. Rather, Siever says, "they were quiet people who often lived with their parents, kept up their studies, and had little desire for a social life."

Siever suggests that eye-tracking problems may naturally lead to social impairment. Noting that "a finely tuned rhythm develops

in social communication," he says that if this rhythm is thrown off by an inability to integrate visual cues or other sensory input easily, social interactions may become unpleasant or even painful. This, he says, may cause people to "gravitate into an isolation and rigid routine most of us could not tolerate."

*The New View of the Self: How Genes and Neurotransmitters Shape Your Mind, Your Personality, and Your Mental Health*, by Larry Siever, MacMillan, 1997.

## 'Touch therapy' reduces symptoms

The debate continues over the effectiveness of "sensory integration therapy," which uses swings, balls, trampolines, toys, soft brushes, fragrances, and other devices to train autistic children to integrate sensory input into a coherent whole (see ARRI 9/2). New research indicates that one technique often used in sensory integration therapy, "touch" or massage therapy, can significantly reduce autistic behaviors.

Tiffany Field and colleagues tested "touch therapy" on 11 autistic preschool boys. The children's clothed bodies were rubbed, using moderate pressure and smooth strokes. Therapists stroked the children's faces, chests, stomachs, legs, feet, arms, and hands, ending with a back massage. A control group of 11 autistic children, matched for IQ, language level, and behavioral problems, played games while sitting on therapists' laps.

The researchers found that both groups improved in two areas: touch aversion and off-task behavior. "[This] is probably not surprising," they say, "given that both interventions involved additional one-on-one attention and physical contact from an adult." But two symptoms—stereotypic behaviors and "orienting to irrelevant sounds"—decreased significantly more in the touch therapy subjects than in controls. And scores on the Autism Behavior Checklist and Early Social Communication Scales, administered before and after therapy, showed significant improvement in the touch therapy group but not in controls. Areas of improvement included joint attention, behavioral regulation, social behavior and relating, sensory symptoms, and "initiating" behavior.

"Brief report: autistic children's attentiveness and responsivity improve after touch therapy," Tiffany Field, David Lasko, Peter Mundy, Tanja Henteleff, Susan Kabat, Susan Talpins, and Monica Dowling; *Journal of Autism and Developmental Disorders*, Vol. 27, No. 3, June 1997, pp. 333-338. Address: Tiffany Field, Touch Research Institute, University of Miami School of Medicine, P.O. Box 016820, Miami, FL 33101.

## Aversives proponents win court battle

An "aversive" is an unpleasant stimulus intended to reduce undesirable or dangerous behavior—for instance, a water spray directed at a child who is biting himself. Researchers and practitioners who use aversives say the techniques are effective, and often reduce or eliminate life-threatening behaviors such as head-banging and eye-gouging when non-aversive approaches have failed. Opponents of aversives claim that the procedures are barbaric, and that most behaviors can be handled effectively with non-aversive techniques.

The aversives battle came to a head in recent years in Massachusetts, where Philip Campbell, Commissioner of the Department of Mental Retardation (DMR), attempted to close down the Judge Rotenberg Educational Center (JRC). The center, which treats autistic and retarded children with highly dangerous aggression and self-injury, primarily uses "positive" techniques but also uses aversives when other approaches fail. The battle between the DMR and JRC led to several court confrontations, the latest of which resulted in then-governor William Weld accepting Campbell's resignation.

The March 1997 ruling, issued by Massachusetts' highest appellate court, upheld an earlier ruling which found that the DMR had harassed the JRC and harmed its residents. In the initial ruling in 1995, Judge Elizabeth O'Neill LaStaiti charged the department with "pervasive public corruption," saying that it concealed favorable certification reports about the JRC and committed perjury. LaStaiti placed the department under court-supervised receivership and found DMR officials in contempt.

The recent ruling by the Supreme Judicial Court of Massachusetts upheld the receivership and also found the department in contempt of court, saying DMR officials had "developed and acted upon a plan to put JRC out of business," and that "innocent patients... have been caught in the crossfire."

Governor Weld, who says he has become "somewhat of a believer" in the usefulness of aversive procedures, accepted Campbell's resignation shortly after the court decision was rendered. A spokesman for the JRC commented that the ruling "affirms a parent's right to choose the treatment they think is best for their son or daughter."

"DMR boss ends stormy tenure," Ed Hayward, *Boston Herald*, March 15, 1997.

—and—

"Campbell decommissioned," *The Boston Globe*, March 15, 1997.

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