

AUDITORY INTEGRATION TRAINING UPDATE:

Scientific Clues, FDA obstruction

A small but growing number of studies indicate that auditory integration training (AIT) can significantly benefit many autistic individuals. But the unanswered question has been: why does it work? A new study suggests, surprisingly, that the technique may lower levels of serotonin, a brain "mes-

senger" chemical that is abnormally high in about a third of people with autism.

AIT is a simple procedure in which individuals listen to specially modulated music through headphones, an hour a day, for about ten days. The technique, developed by French physician Guy Berard, has become

popular in the United States as a treatment for autism. Preliminary evidence indicates that AIT makes some children more sociable and attentive, as well as reducing their oversensitivity to sound (ARRI 6/2, 7/3, 8/2).

M. Waldhoer, Jaak Pansepp and colleagues at Bowling Green University conducted an experimental study of auditory integration training, and say that "we were able to replicate [studies showing positive effects] with 33 children." Intrigued by this finding, the researchers decided to develop an animal model that would allow them to study the effects of AIT on the brain. "Domestic chicks were selected," the researchers say, "because of their sound responsivity in the human acoustic range, their strong vocal repertoire and sociability."

The researchers gave some of the chicks 20 half-hour sessions of AIT during their first 12 days of life, while playing unmodulated music to one group of "control" chicks and no music at all to another. They report that "post 'therapy' effects (replicated across several experiments) included increased growth and a reduced inhibition of separation induced distress vocalizations in response to music, but not to self-reflective cues (i.e., mirrors)." Post-mortem studies of the chicks' brains revealed reduced levels of serotonin and 5-HIAA (a product of serotonin metabolism) in the chicks exposed either to AIT or to regular music, but not in the unexposed chicks.

"Although only marginal differences between music and AIT groups were present," the researchers say, "the data suggest that long-term exposure to such stimuli may selectively reduce serotonergic tone in the brain."

Although the idea that faulty brain function may be corrected by sending processed sound into the ears—a basic premise of AIT—tends to arouse a good deal of skepticism, researchers Paula Tallal of Rutgers University and Michael Merzenich of the University of California Medical Center in San Francisco have reported related, confirmatory findings. A *New York Times* report of their presentation at the annual Neuroscience meeting said that children with severe speech and reading disabilities advanced two full years in their language development after just five weeks of treatment with computer-generated processed speech. Other researchers were quoted as saying the work is "superb" and "tremendously exciting," but details are not yet available. Watch ARRI for further information.

In the meantime, the Food and Drug Administration has inexplicably classified AIT devices as "Class III Medical Devices," which implies that they pose a hazard. The classification has been appealed, and the decision (a change to Class II, it is hoped) is expected by mid-December.

"An animal model of auditory integration training (AIT)," M. Waldhoer, J. Panksepp, D. Pruitt, M. Vainigan, D. McKee, J. Rossi III, and J. Lindsey; presentation to the annual meeting of the Society for Neuroscience, San Diego, November 13, 1995.

AVERSIVES UPDATE:

Massachusetts court case; SIBIS success

Massachusetts officials accused of perjury in efforts to close center

A judge in Massachusetts, accusing state officials of exhibiting "pervasive public corruption," has ordered them to pay more than one million dollars to an area center which treats violent and self-injurious students.

Judge Elizabeth O'Neill LaStaiti charged that Philip Campbell, Commissioner of the Massachusetts Department of Mental Retardation, and his top aide, Mary Cerreto, used unethical measures in an attempt to shut down the Judge Rotenberg Educational Center (formerly the Behavior Research Institute). According to LaStaiti, Campbell and Cerreto had a personal bias against the center because it sometimes uses aversives to handle dangerous behaviors.

"The findings of this court," LaStaiti ruled in October, "...include findings that high-ranking government officials have been deliberately untruthful on the witness stand, have expended public funds in order to pursue baseless allegations, have authorized unfounded ethical attacks and launched investigations on court personnel, constitut[ing] pervasive public corruption."

Among other charges, the judge accused Campbell, Cerreto, and other state officials of concealing reports by inspectors who had found that the center complied with all state regulations; creating a "Tuesday morning meeting" team to discuss ways to shut down the school; harrasing court-appointed officials; and knowingly submitting false documents and "repeatedly and without hesitation" lying to the court investigating the department's conduct.

Judge LaStaiti recommended that the district attorney launch a perjury investigation against Campbell and Cerreto, and ordered that supervision of the Judge Rotenberg Center be removed from the Department of Mental Retardation and turned over to an independent agency.

The battle between the Judge Rotenberg Center and the Massachusetts Department of Mental Retardation is the latest episode in a bitter struggle in the state between opponents of aversive procedures and those who believe they are sometimes needed to handle dangerous behaviors.

Parent, researchers report success with SIBIS

In the last issue of ARRI, Kimberlie Gilbert-Oakley—the parent of a severely self-injurious autistic child—wrote ARRI asking

us to put her in touch with other parents dealing with self-injurious children.

Since that time, Gilbert-Oakley was able to obtain permission to use the SIBIS (Self-Injurious Behavior Inhibiting System) with her son. SIBIS administers a small electrical shock to the arm or leg each time a child hits himself violently. Gilbert-Oakley reports that her son's self-injury has declined dramatically since SIBIS treatment was instituted, and that he is much happier and able to attend school.

Gilbert-Oakley's anecdotal report is supported by research indicating that SIBIS can be remarkably effective in reducing self-injury. One recent study, by Don Williams et al., reported on a six-year follow-up of an autistic woman using SIBIS. The device had been introduced after years of drugs and behavioral interventions had failed to reduce the woman's SIB, which had resulted in a detached retina, cataracts, and repeated head, face, and shoulder trauma.

Williams et al. report that the long-term SIBIS treatment resulted in "a number of significant benefits...: a) a 93% reduction of SIB episodes from a mean of 24.6 per month to 1.7 per month, b) the prevention of an estimated 1650 applications of contingent mechanical restraint, c) an 82% reduction in injuries produced by SIB from 2.2 per month to .4 per month (with no injuries during the last year of follow-up), and d) a reduced intake of [the drug] Loxitane by an estimated 255,000 mg" over the course of treatment. In addition, they say, the staff working with the woman have reported improvements in her social interactions, responsiveness, compliance, and self-control, and she can now participate regularly in community activities. She has also been moved to a less restrictive living area.

SIBIS produces a sharp stinging sensation, but no physical harm. Opponents of aversives, however, say that using even mild shock is unethical in the treatment of autism.

"Judge raps state agency in treatment center case," David Armstrong, *Boston Globe*, October 11, 1995.

—and—

"UM alumnus accused of leading corrupt campaign against center," Glen Johnson, *Massachusetts Daily Collegian*, October 11, 1995.

—and—

"A long-term follow-up of treatment for severe self-injury," Don E. Williams, Sharon Kirkpatrick-Sanchez, and W. Terry Crocker; *Research in Developmental Disabilities*, Vol. 15, No. 6, 1994, pp. 487-501.