

# Biomedical/Educational Update:

## Teaching new skills: every-other-day schedule may work best

A new study suggests that practicing a skill every other day, rather than every day, may improve learning by both nondisabled and autistic students.

Martha Venn and colleagues tested the effects of every-day vs. every-other-day instruction on six preschool children, including one child with autism and one with pervasive developmental disorder. Their findings were surprising: "the every-other-day schedule," they report, "resulted in fewer sessions, trials, and minutes of instruction to criterion than did the every-day schedule." The differences were especially marked for the students with autism and PDD. "For [these] children," Venn et al. say, "only 55% of the sessions required for the every-day condition were required for the every-other-day condition." There was no difference in students' ability to maintain and generalize skills whether they were taught every day or every other day.

The researchers say their finding is consistent with earlier research with autistic children indicating that varying tasks within a training session is more effective than teaching only one task at a time. Perhaps, Venn et al. say, varying tasks—either by alternating tasks within a session, or by using an every-other-day teaching schedule—results in increased attention and motivation.

"Effects of every-day and every-other-day instruction," Martha L. Venn, Mark Wolery, and Mary Greco; *Focus on Autism and other Developmental Disabilities*, Vol. 11, No. 1, Spring 1996, pp. 15-28. Address: Mark Wolery, Child and Family Studies Program, Allegheny-Singer Research Institute, 320 E. North Ave., Pittsburgh, PA 15212.

## Vitamin E treatment for TD goes "mainstream"

The use of vitamin E to protect against side effects of neuroleptic drugs—an idea once treated with derision by traditional physicians—is now being recommended by "mainstream" medical journals, thanks to a series of positive studies (see ARRI 8/3, 1994).

To date, ten of 13 studies indicate that vitamin E is effective, in at least some patients, in reducing the symptoms of tardive dyskinesia (TD). Symptoms of TD—which occur in up to a quarter of patients undergoing long-term neuroleptic treatment—include involuntary motor movements such as chewing and tongue darting. Symptoms often remain long after drug treatment is stopped.

In the most recent study, James Lohr and Michael Caligiuri administered 800 IU of vitamin E twice a day to 17 patients, while

giving a placebo to 18 other patients. They report that both videotaped ratings and instrument measurements showed significant reduction of dyskinesia in the vitamin E group, but not the placebo group.

The researchers note that patients who had suffered TD symptoms for five years or less showed greater improvement than those with symptoms of longer duration. An additional finding, they say, was that vitamin E reduced behavioral symptoms in a subgroup of patients with schizophrenia. No change was seen in symptoms of parkinsonism, another side effect of neuroleptic drugs.

Lohr and Caligiuri suggest that vitamin E's usefulness in combatting TD may be due to its antioxidant properties. Antioxidants protect against free radicals, which are destructive molecules that form in the body. "Our laboratory has been investigating the possibility," they say, "that persistent TD may be related to the formation of toxic oxygen radicals in the brain."

This theory, they say, is supported by a number of clinical findings implicating neuroleptic drugs as a cause of increased free radical production in the brain. The theory, they say, "would also offer an explanation for certain [TD] risk factors such as advanced age, smoking, and alcohol abuse, all of which have also been proposed to be associated with increased radical production or damage."

"A double-blind placebo-controlled study of vitamin E treatment of tardive dyskinesia," James B. Lohr and Michael P. Caligiuri; *Journal of Clinical Psychiatry*, 57:4, April 1996, pp. 167-173. Address: James B. Lohr, Chief, Psychiatry Service, V-116A, San Diego VA Medical Center, San Diego, CA 92161.

## Baseball blues: a behavior mod lesson

A recent report in the *Journal of the American Dental Association* illustrates an important principle: if you offer a reward as part of a behavior modification program, be sure you can follow through!

C. D. Johnson et al. reported on a 34-year-old autistic man who scratched his gums until they were inflamed. "The man became receptive to treatment and stopped the behavior after the dentist promised to reward healthy behavior with tickets to a baseball game," they report. "...The patient was no longer hostile to the dentist, responded well to dental treatment, and received a gum graft."

So far, so good. Unfortunately, however, the 1994 baseball strike started just before the promised baseball game could be played. Johnson et al. report that "the patient lost his trust in the dentist, resumed the self-mutilation, and the gum injury returned."

"Preventing factitious gingival injury in an autistic patient," C. D. Johnson, M. K. Matt, D. Dennison, R. S. Brown, and S. Koh; *Journal of the American Dental Association*, Feb. 1996, Vol. 127, No. 2. Address not listed.

## Learning to ask the right questions

While many low-functioning autistic individuals have difficulty learning to ask questions, higher functioning individuals often have the opposite problem: they ask too many questions. But a study by R. S. Dixon et al. suggests that a simple behavior modification procedure can reduce this "over-questioning" behavior.

Research suggests, Dixon and colleagues say, that "the higher-functioning autistic child who asks many questions is doing so because of an inability to initiate, or terminate, a conversation." Questions, they say, "may not necessarily be intended as requests for information; they may be attempts to initiate social contact and may reflect the child's limited repertoire of initiation devices." Unfortunately, they note, the autistic student who asks too many questions annoys peers and teachers, and interferes with class work.

Because self-monitoring has proven to be a simple and powerful behavior modification technique, Dixon et al. wondered if the method might be useful in reducing inappropriate questioning by autistic students. They selected as their subject a high-functioning 18-year-old 11th grade student, referred because her teacher reported that "both the rate and nature of [the girl's] questions was disrupting classroom discourse and negatively affecting peer evaluations of the student."

At the beginning of each science class, the autistic girl was given a piece of paper with eleven boxes (representing the usual number of questions the girl asked during a science class). She was told to check off one box each time she asked a question, and was instructed not to ask any more questions once the boxes were all checked off. The girl was instructed to give the paper to her teacher at the end of each class.

"Implementation of the self-monitoring procedure resulted in a rapid decrease in the number of questions asked," the researchers report, with the average number of questions dropping to less than four per session. In addition, the percentage of appropriate questions asked by the girl increased from about 50% to over 90% during treatment, and to 100% at a follow-up three weeks later.

"Reducing inappropriate questioning behaviour in an adolescent with autism: a case study," R. S. Dixon, D. W. Moore, N. Harnnett, R. Howard, and K. Petrie; *Behaviour Change*, Vol. 12, No. 3, 1995, pp. 163-166. Address: Robyn Dixon, Education Department, University of Auckland, P.O. Box 92019, Auckland, New Zealand.

*Reminder: A subscription to the ARRI is an excellent gift for a friend, relative, or teacher interested in autism!*