

## Educational/Biomedical Update:

### Modified 'timeout ribbon' technique reduces inappropriate behavior

A variation of the "timeout ribbon" technique is useful in helping mentally retarded individuals control their behavior in school and community settings, according to a new study.

Paul Alberto and colleagues tested the effectiveness of the technique on two middle-school students with moderate mental retardation. During the study, each student wore an athletic wristband, which signaled that he could earn reinforcers. (The original "timeout ribbon" technique involves using colored ribbons.) When inappropriate behavior occurred, staff members removed the wristband and placed the student in a non-seclusionary timeout.

The researchers say the procedures led to a complete elimination of the targeted behavior problems, which had not returned by the two-week follow-up, even though the students were receiving fewer reinforcers for good behavior. They conclude, "The timeout ribbon procedure provided an efficient, effective, and socially valid means of supporting positive behavior across settings for these students."

"Use of the timeout ribbon procedure during community-based instruction," P. Alberto, L. J. Heflin, and D. Andrews, *Behavior Modification*, Vol. 26, No. 2, April 2002, 297-311. Address: Paul Alberto, Georgia State University, Department of Special Education, University Plaza, Atlanta, GA 30303.

### Combined techniques control fast eating

A combination of simple behavior modification techniques can effectively slow down excessively fast eating, according to a new study.

Carrie Wright and Timothy Vollmer designed an intervention for a 17-year-old developmentally disabled girl who ate so rapidly that she sometimes choked on her food. The procedure consisted of:

—Using a beeping timer set to the desired time between bites. The researchers initially used a fixed-rate interval, and later adjusted the timer interval (up to a maximum of 15 seconds) based on the average between-bites interval over the previous five sessions.

—Physically blocking any efforts by the girl to take bites of food before the timer beeped, re-setting the timer, and guiding the girl to place her eating utensil on the table

and put her hand in her lap and wait for the timer.

—Ignoring any tantrums or self-injury that occurred as a result of blocked attempts to eat.

—Prompting the girl by saying, "Eat slowly."

While the fixed-rate intervals resulted in little progress, the researchers say, the adjusted-rate interval procedure, combined with the other techniques, resulted in a gradual increase to the desired 15-second interval between bites. "In the final sessions," the researchers say, "[the girl] almost never attempted a bite before the timer sounded."

When the researchers discontinued the treatment, the girl began eating more rapidly again. When the intervention was reinitiated, this time implemented by the girl's mother, it again was successful.

The researchers note that the treatment initially led to an increase in tantrums and self-injury. However, when therapists ignored these behaviors, they decreased fairly rapidly.

"Evaluation of a treatment package to reduce rapid eating," Carrie S. Wright and Timothy R. Vollmer, *Journal of Applied Behavior Analysis*, Vol. 35, No. 1, Spring 2002, 89-93. Address: Timothy R. Vollmer, Department of Psychology, University of Florida, Gainesville, FL 32611.

### Gene study finds several 'promising' regions

A large-scale, two-stage study of families with two or more autistic members implicates a number of genes in the development of autism.

Yujun Shao and colleagues conducted a genetic screen of 52 families, and a follow-up study involving an additional 47 families. The researchers found evidence linking regions on chromosomes 2, 3, 7, 15, 19 and X to autism.

They note that the majority of the chromosome regions identified in their study overlap those identified in other research, but say that the region on chromosome 3 has not been reported previously.

"Genomic screen and follow-up analysis for autistic disorder," Yujun Shao, Chantelle M. Wolpert, Kimberly L. Raiford, Marisa M. Menold, Shannon L. Donnelly, Sarah A. Ravan, Meredith P. Bass, Cate McClain, Lennart von Wendt, Jeffery M. Vance, Ruth H. Abramson, Harry H. Wright, Allison Ashley-Koch, John R. Gilbert, Robert G. DeLong, Michael L. Cuccaro, and Margaret A. Pericak-Vance, *American Journal of Medical Genetics*, Vol. 114, 2002, 99-105. Address: Margaret A. Pericak-Vance, Department of Medicine, Center for Human Genetics, CARL Building, Box 3445, Duke University Medical Center, Durham, NC 27710.

### Ketogenic diet gets nod

The high-fat, low-protein, low-carbohydrate ketogenic diet is often used to treat seizures, particularly in young children. Several recent studies reinforce findings that the diet is highly effective, either by itself or as an "add-on" treatment used with anticonvulsants.

G. Coppola et al. recently used the ketogenic diet as an add-on treatment for 56 children and young adults with epilepsy refractory to drug treatments. They report that the treatment was effective, although the number of subjects experiencing a greater-than-fifty-percent reduction in seizures dropped from one third in the first three months to one quarter at six months, and declined additionally afterward. Adverse effects were mild and transient, and doctors were able to reduce some children's medications.

In an earlier study, K. J. Bough and D. A. Eagles compared the effectiveness of the ketogenic diet to that of two anticonvulsant drugs, valproic acid and phenytoin (Dilantin). Inducing seizures in rats, the researchers found that the ketogenic diet "ranks among valproic acid and phenytoin as an effective treatment for seizures, without observed drug-associated neurobehavioral contraindications." In addition, they report, the diet works synergistically with valproic acid to increase seizure threshold, and when combined with phenytoin it appears to both elevate seizure threshold and reduce seizure severity.

A third study, by Bernhard Maydell et al., found that the ketogenic diet—generally used to treat generalized seizures—also can be an effective treatment for focal seizures. Evaluating the diet's effects on 134 patients with seizures unresponsive to medication, they found that 42 percent of those with generalized seizures, and 24 percent of those with focal seizures, experienced a seizure reduction of more than 50 percent after 12 months of treatment.

"The ketogenic diet in children, adolescents and young adults with refractory epilepsy: an Italian multicentric experience," G. Coppola et al., *Epilepsy Research*, Vol. 48, No. 3, February 2002, 221-7. Address: G. Coppola, Clinic of Child Neuropsychiatry, Second University of Naples, Via Pansini 5, 80131, Naples, Italy.

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"Comparison of the anticonvulsant efficacies and neurotoxic effects of valproic acid, phenytoin, and the ketogenic diet," K. J. Bough and D. A. Eagles, *Epilepsia*, Vol. 42, No. 10, October 2001, 1345-53. Address: K. J. Bough, Dept. of Biology, Georgetown University, Washington, DC 20057.

—and—

"Efficacy of the ketogenic diet in focal versus generalized seizures," Bernhard Maydell et al., *Pediatric Neurology*, Vol. 25, 2001, 208-12. Address: Elaine Wyllie, Section of Pediatric Epilepsy, The Cleveland Clinic Foundation, Dept. of Neurology, Desk S 51, 9500 Euclid Ave., Cleveland, OH 44195.