RESEARCH REPORT

Editor's note: The project described below is but one of many funded by The National Fragile X Foundation. Research is one of the many areas in which donations from members and supporters are channeled into activities with a direct bearing on the lives of individuals and families impacted by Fragile X. For more information on current research projects, visit: www.fragilex.org/html/current_research_studies.htm

Evaluating an Intensive Behavioral Intervention for Children and Adolescents With Fragile X Syndrome

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Research Grant Funded 2008–2010

We all know that children with fragile X syndrome have a weakness in math. Is there a way to teach math skills to these children in an efficient and effective manner? In this study, we wanted to know whether Discrete Trial Training (DTT)—a widely used instructional technique to teach children with autism—could help children with FXS learn new math skills. DTT is based on the principles of Applied Behavior Analysis (ABA). It involves teaching children in a very structured and regimented manner, using lots of rewards and games to help them stay focused and on task. In the past, DTT was very expensive because it had to be implemented by a behavior therapist in one-on-one teaching sessions. But given advances in technology, DTT can now be implemented on a computer, thus eliminating the social demands that children with FXS often find anxiety-provoking.

For this study we used a commercially available software product called the "Discrete Trial Trainer" (Accelerations Educational Software, Inc.) to teach 15 boys and girls with FXS (aged 10 to 20 years) new math skills. We deliberately selected children with low IQs (50 to 80) so that they would potentially benefit most from the study. Importantly, we also included a group of children who did not have FXS (or any other genetic syndrome), but who were about the same age and had the same IQ levels. This enabled us to determine whether children with FXS were any different than other children with intellectual disabilities in their ability to learn math skills. We also collected brain scans to assess whether any differences between children with FXS and matched-IQ children were reflected in their brain activation patterns. (These data will be discussed in a later report.)

Results showed that 87 percent of children *in both groups* were able to learn the math concepts within 1,500 trials (about eight hours of training). Importantly, there did not appear to be a difference between the groups in their ability to learn new concepts.

This is good news for parents and professionals working with children with FXS. This is the first time that DTT has been evaluated in FXS, and given the positive results, we hope that this instructional technique will be adopted more often in the future. ■

Grants Available for Summer Student Research

SUMMER RESEARCH FELLOWSHIPS
Funded by The National Fragile X Foundation's William & Enid Rosen Research Fund and the NFXF Research Fund

CALL FOR PROPOSALS 2011

This year, The National Fragile X Foundation will fund one or more summer student research fellowships at $2,500 each through the William & Enid Rosen Research Fund and the NFXF Research Fund. The student's work can be in the area of fragile X syndrome (FXS), fragile X-associated tremor/ataxia syndrome (FXTAS) or fragile X-associated primary ovarian insufficiency (FXPOI). Proposals should be submitted to the NFXF by April 18, 2011. Notification of awards will be made by May 6, 2011.

Please visit www.FragileX.org and select the "Research" menu for more information. ■