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TITLE: A Randomized, Placebo-Controlled Trial of D-cycloserine for the Enhancement of Social Skills Training in Pervasive Developmental Disorders

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ABSTRACT
The main objective of this application is to determine whether D-cycloserine (DCS) can enhance the efficacy of social skills training (SST) in the treatment of children and young adolescents with autism spectrum disorders (ASDs). We will evaluate the efficacy, tolerability, and last effects of DCS given one hour prior to each of 10 weekly SST sessions for the treatment of social impairment in 52 children and young adolescents (ages 5-11 years) with ASDs during a randomized placebo-controlled trial. The safety and tolerability of DCS and durability of treatment response will also be examined. Institutional IRB and Department of Defense Human Research protections Office approvals have been obtained. Staff have been hired and trained on study procedures. The first six groups of 6 youth (per group: 4 with ASD and 2 normally developing children) have completed the first SST group and the seventh group is active in the trial due to complete 10 weeks of treatment in March 2012. We have a set schedule for 4 groups per year. We recently received IRB approval of an amendment to allow for enrollment of youth with stable seizure disorders and youth who take up to two concomitant psychotropic non-glutamatergic drugs. In addition we have received IRB approval to add use of the Autism Diagnostic Observation Schedule to better characterize ASD pathology.

INTRODUCTION
The long-range goal of this research is to identify better treatments for the core social and communication impairment of autism spectrum disorders (ASDs). The main objective of this application is to determine whether D-cycloserine (DCS) can enhance the efficacy of social skills training (SST) in the treatment of children and young adolescents with ASDs. The central hypothesis is that DCS will enhance the learning of social skills over the course of 10 weeks of SST. To test this hypothesis, we will evaluate the efficacy of DCS given one hour prior to each of 10 weekly SST sessions for the treatment of social impairment in 52 children and young adolescents (ages 5-11 years) with ASDs during a randomized placebo-controlled trial. The safety and tolerability of DCS and durability of treatment response will also be examined.

HISTORY
Final IRB approval was obtained August 5, 2009. Initial revisions requested by the Department of Defense Human Research Protections Office (HRPO) were received and processed in an IRB amendment approved on December 25, 2009. Final revisions then requested by the HRPO were submitted to our IRB and final approval was received February 4, 2010. During the initial funding year staff were hired and trained to conduct this study. Source documents were created. Staff was trained on the execution of the protocol and on the outcome measures employed in the protocol. Procedures for dispensing and tracking drug were established with Investigational Drug Services. Arrangements for obtaining drug and matching placebo were made. The SST curriculum, including lesson plans, homework assignments, and parent notes was finalized during the first study year. Supplies for the SST were purchased. Visual supports for the curriculum were created. A procedure for coding and ensuring treatment and rating fidelity was established.

CURRENT YEAR UPDATE/RESEARCH ACCOMPLISHMENTS
From March 1, 2011 to February 29, 2012 we completed 4 social skills training groups each enrolling 4 youth with ASDs and 2 youth with neurotypical development who served in each group as peer trainers. Given this, we enrolled and completed study with 16 youth with ASDs

and 8 youth with neurotypical development during this time period. All groups met recruitment goals on time and we achieved our overall goal to complete 4 groups during the 2011 calendar year. We have set a schedule to conduct four subject groups per 12 months until enrollment is completed.

REPORTABLE OUTCOMES
We expect most of the reportable outcomes of this award will be realized in the later years of the project.

CONCLUSION
Since this is a clinical trial, the results will be analyzed after all subject data collection has been completed (Year 5).

REFERENCES:
None.

APPENDICES:
None.

SUPPORTING DATA:
None.