

Developing and Evaluating School Mental Health Treatments for Adolescents with ADHD

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Center for Intervention Research in Schools



Why School Mental Health?

- Special education teacher to clinical psychology
- STP
- Access to care
- Observe and work in child's environment
- Flexibility
- Longevity
- Limitations
 - Parents
 - Summers
 - Depth & breadth of services



Summer Treatment Program



Adolescents with ADHD

- Don't worry. Your child will grow out of it when he reaches puberty
- Can't just do upward extensions of what works for children

Can treatment
children with
adolescent

- One of first
adolescent

Dependent variable

- Quiz
- Assignment 1
- Assignment 2
- Cumulative tests
- On-task percentage
- % Disruptive behavior
- Study hall rules
- Teacher ratings
 - Inattention/overactivity
 - Oppositional/defiant

Table II. Means, Standard Deviation

Dependent variable	Place
	Mean
Quiz	66.5
Assignment 1	74.3
Assignment 2	51.9
Cumulative tests	67.9
On-task percentage	81.0
% Disruptive behavior	7.1
Study hall rules	0.5
Teacher ratings	
Inattention/overactivity	2.4
Oppositional/defiant	0.5

^aNote: Effect sizes were computed by dividing the standard deviation of the difference between medication and placebo by the standard deviation of the dependent variable to obtain the effect size.

Vol. 19, No. 5, 1991

Effects on Academic and
Behavior of ADHD Junior High School
Students in a Self-Management
Format Classroom¹

E. Pelham²

Designs and Interpretation

Experimental and Clinical Psychopharmacology
2001, Vol. 9, No. 2, 163-175

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1064-1297/01/\$5.00 DOI: 10.1037/1064-1297.9.2.163

Dose-Response Effects of Methylphenidate on Ecologically Valid Measures of Academic Performance and Classroom Behavior in Adolescents With ADHD

Steven W. Evans
James Madison University

Bradley H. Smith
University of South Carolina

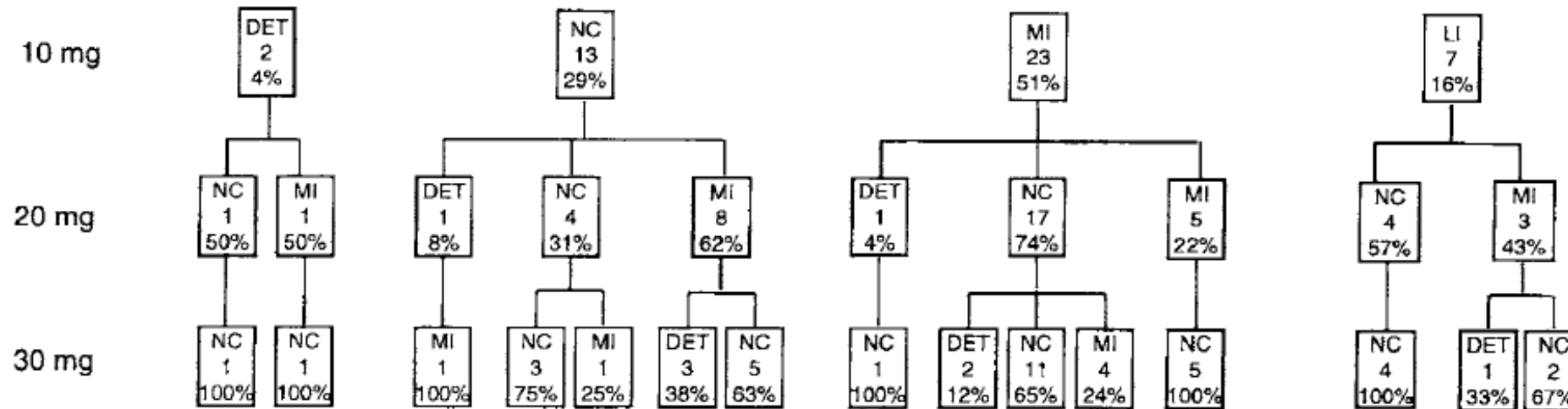
Elizabeth M. Gnagy
State University of New York at Buffalo

William E. Pelham
State University of New York at Buffalo

Oscar Bukstein
University of Pittsburgh Medical Center

Andrew R. Greiner, Lori Altenderfer,
and Carrie Baron-Myak
University of Pittsburgh Medical Center

Daily Quiz



Measures of School Performance

Experimental and Clinical Psychopharmacology
2001, Vol. 9, No. 2, 163-175

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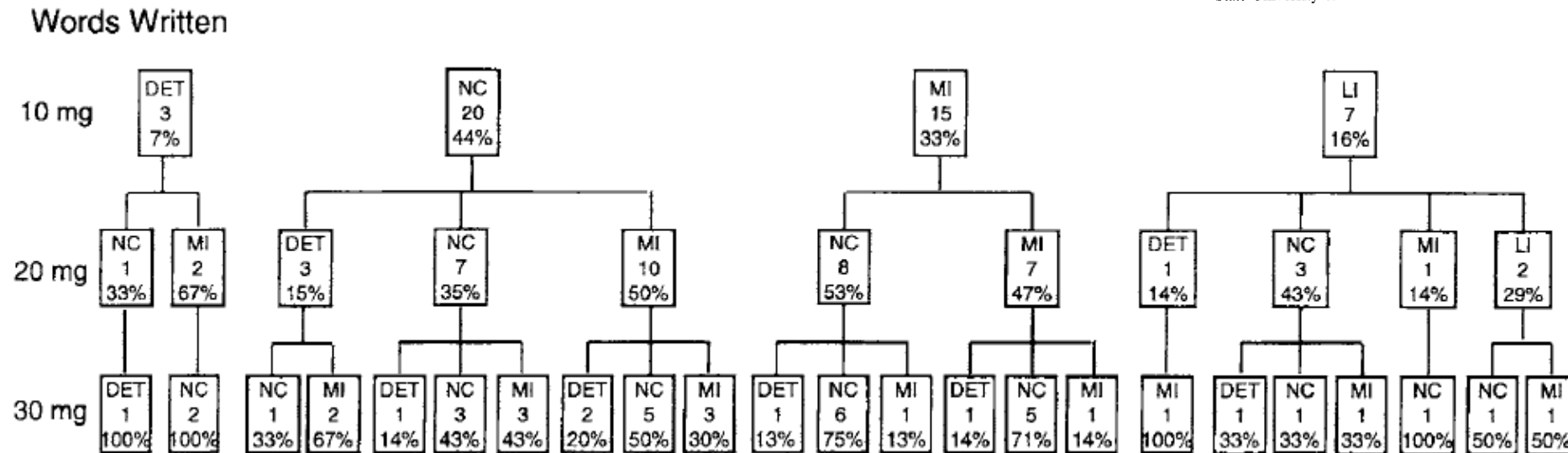
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Stimulants and Adolescents

Benefits

- Academic engagement and related behaviors at school
- Driving

Risks

- Abuse
- Sell to others

CLINICAL PRACTICE GUIDELINE

American Academy
of Pediatrics



DEDICATED TO THE HEALTH OF ALL CHILDREN™

Clinical Practice Guideline for the Diagnosis, Evaluation, and Treatment of Attention-Deficit/Hyperactivity Disorder in Children and Adolescents

Mark L. Wolraich, MD, FAAP,^a Joseph F. Hagan, Jr, MD, FAAP,^{b,c} Carla Allan, PhD,^{d,e} Eugenia Chan, MD, MPH, FAAP,^{f,g} Dale Davison, MSpEd, PCC,^{h,i} Marian Earls, MD, MTS, FAAP,^{j,k} Steven W. Evans, PhD,^{l,m} Susan K. Flinn, MA,ⁿ Tanya Froehlich, MD, MS, FAAP,^{o,p} Jennifer Frost, MD, FAAP,^{q,r} Joseph R. Holbrook, PhD, MPH,^s Christoph Ulrich Lehmann, MD, FAAP,^t Herschel Robert Lessin, MD, FAAP,^u Kymika Okechukwu, MPA,^v Karen L. Pierce, MD, DFAACAP,^{w,x} Jonathan D. Winner, MD, FAAP,^y William Zurhellen, MD, FAAP,^z SUBCOMMITTEE ON CHILDREN AND ADOLESCENTS WITH ATTENTION-DEFICIT/HYPERACTIVE DISORDER

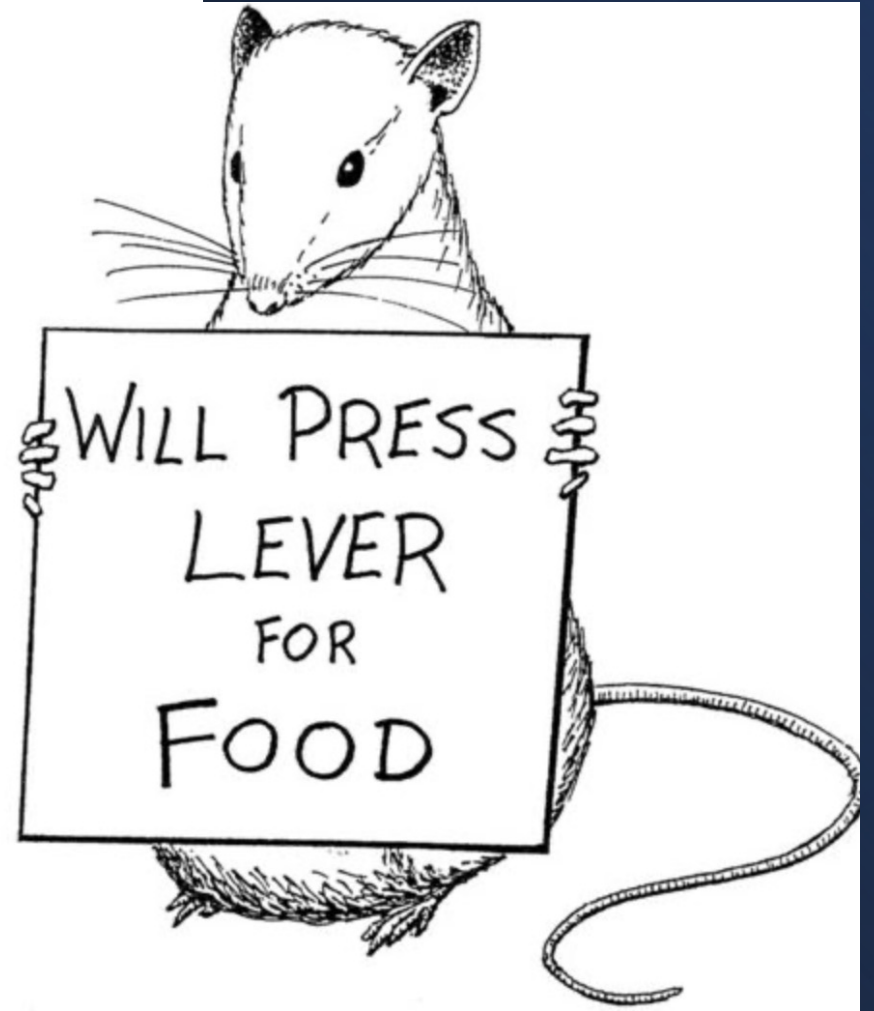
Can psychosocial treatments for children work for adolescents - Behavioral?

- Teachers
 - Context difference
 - One class period
 - Over 100 students
 - Coordination across teachers uncommon
- Parents
 - Family therapy
 - Robin & Foster (1989) – Negotiating parent adolescent conflict
 - Barkley – Series of studies applied to adolescents with ADHD

“The **family may be the least important vector for creating change** than might be a greater emphasis on the teen’s peer group or on changing some of the genetically mediated characteristics of the teen that may be provoking such conflict (such as ADHD), perhaps through psychopharmacology.” (2001)

Behavioral principles apply to adolescents...

- But they are much more difficult to effectively manage than they are with young children
 - Much of their behavior is not monitored by adults
 - Effective reinforcers are expensive
 - Social reputation means more to many of them than anything a parent or teacher can provide
 - Most benefits do not last much after the contingencies are in place



How do we effectively change behavior over time in other areas?

Training Intervention Steps

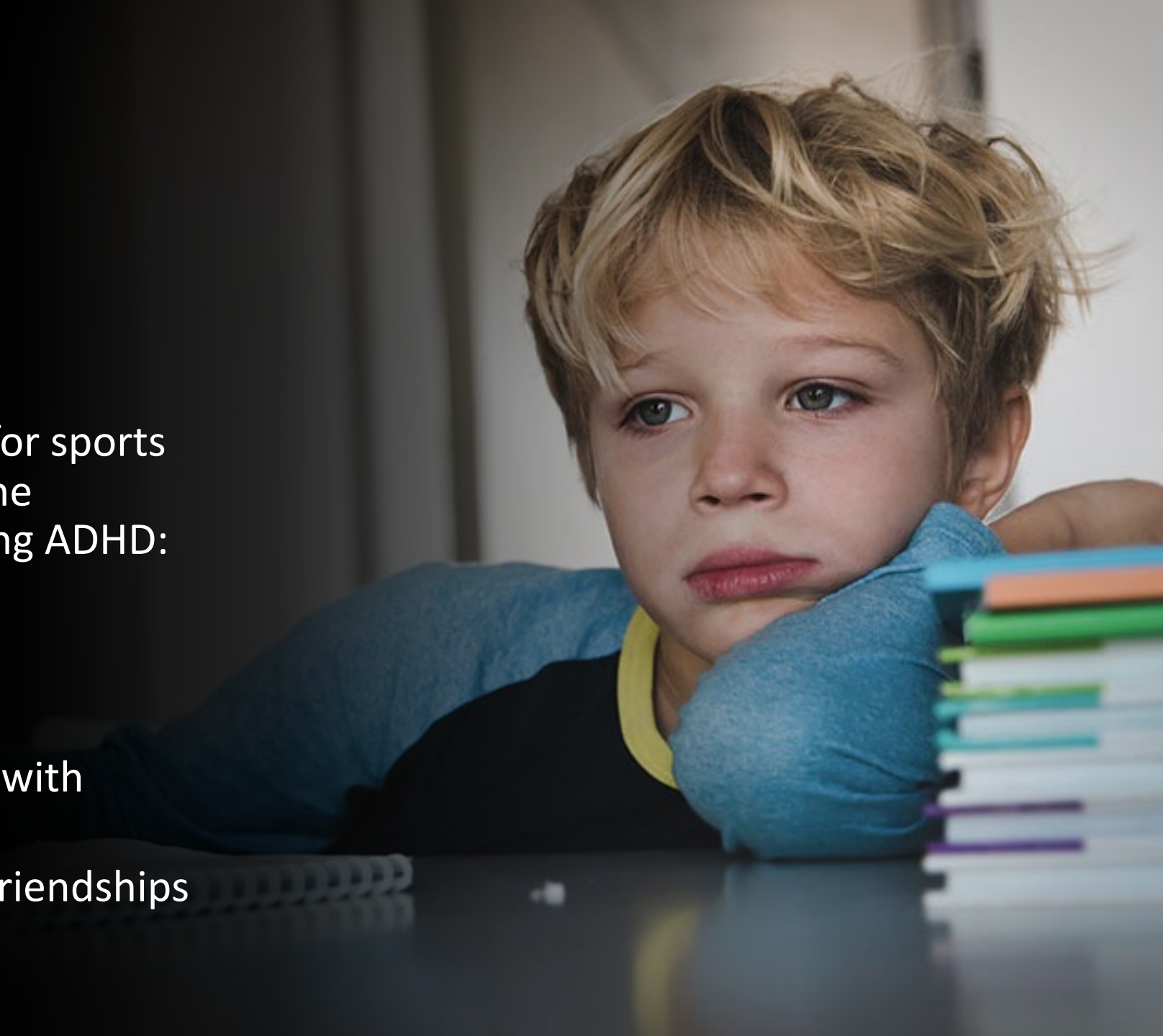
1. Brief teaching of concepts
2. Modeling
3. Practice with coaching
4. Repeat extensively
5. Measure progress
6. Make multi-step behaviors become automatic without thinking





Training Interventions

- We understand this approach for sports and academics – why not for the problems associated with having ADHD:
 - Completing work
 - Organizing tasks
 - Regulating emotions
 - Communicating effectively with others
 - Initiating and maintaining friendships



Role of Disorganization

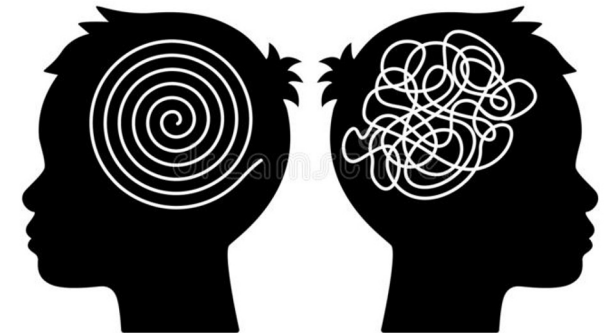
Vigo, Evans & Owens, (2015)

Evans, S.W., Allan, D., Xiang, J., Margherio, S., Owens, J.S. & Langberg, J.M. (2021).

- Disorganized materials
- Disorganized thinking
 - Recognize patterns in behaviors of others
 - Establish patterns or routines

Lead to Problems

- Failure to independently complete work
- Difficulty establishing and maintaining friendships
- Problems planning activities



Challenging Horizons Program

Training Approach

- Academics
 - Taking notes
 - Materials organization
 - Study skills
 - Writing
- Interpersonal Behavior
 - Interpreting the feedback of others
 - Determining how you want to be perceived by others
 - Adjusting your behavior to achieve your goals

Modalities of Implementation

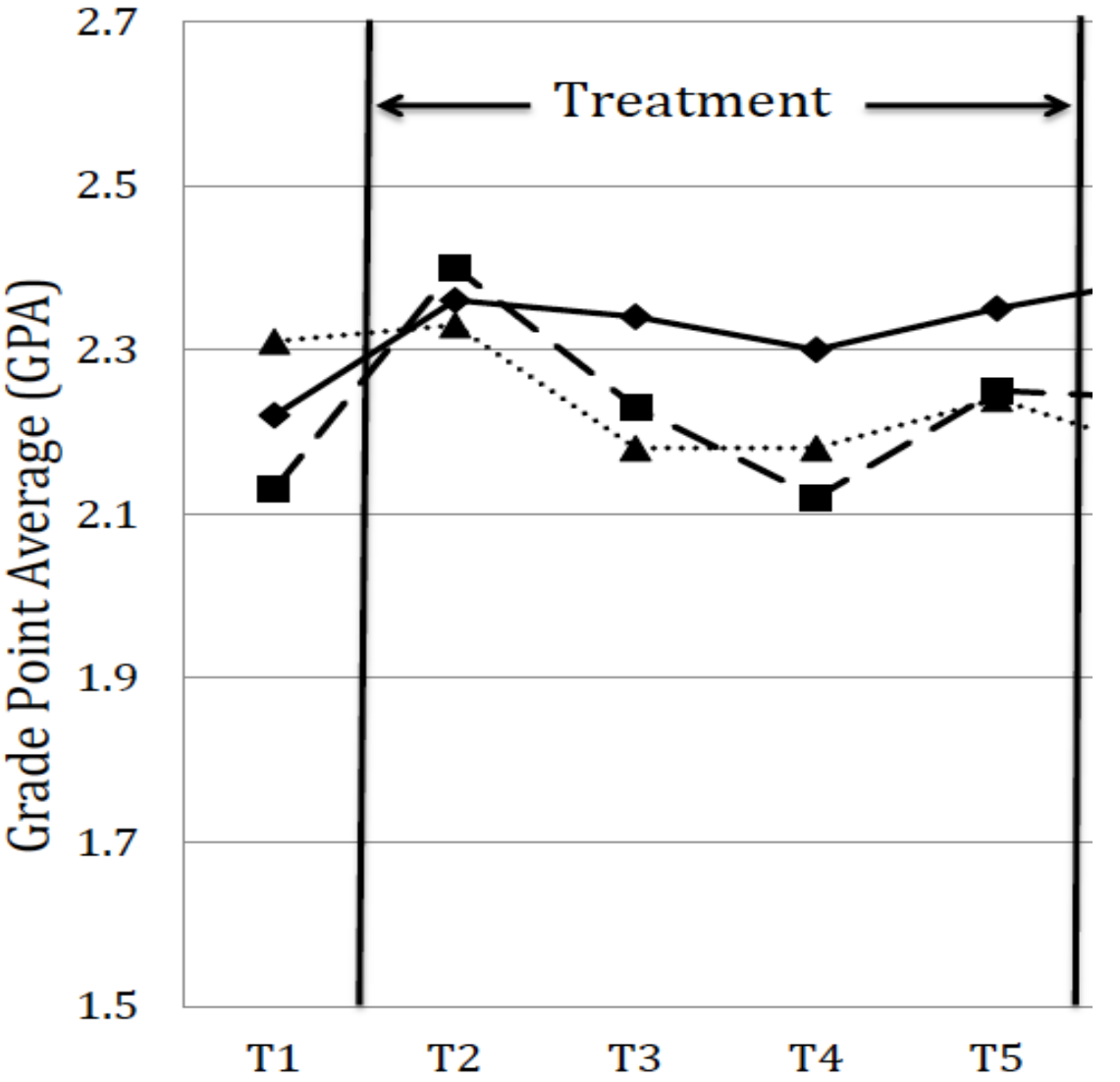
- After School Program
 - 4 to 5 hours per week
 - Research staff
- Mentoring
 - 20 to 30 minutes 1x every 2 weeks
 - School staff
- Integrated Model
 - 50 minutes per day
 - School staff

Research Questions

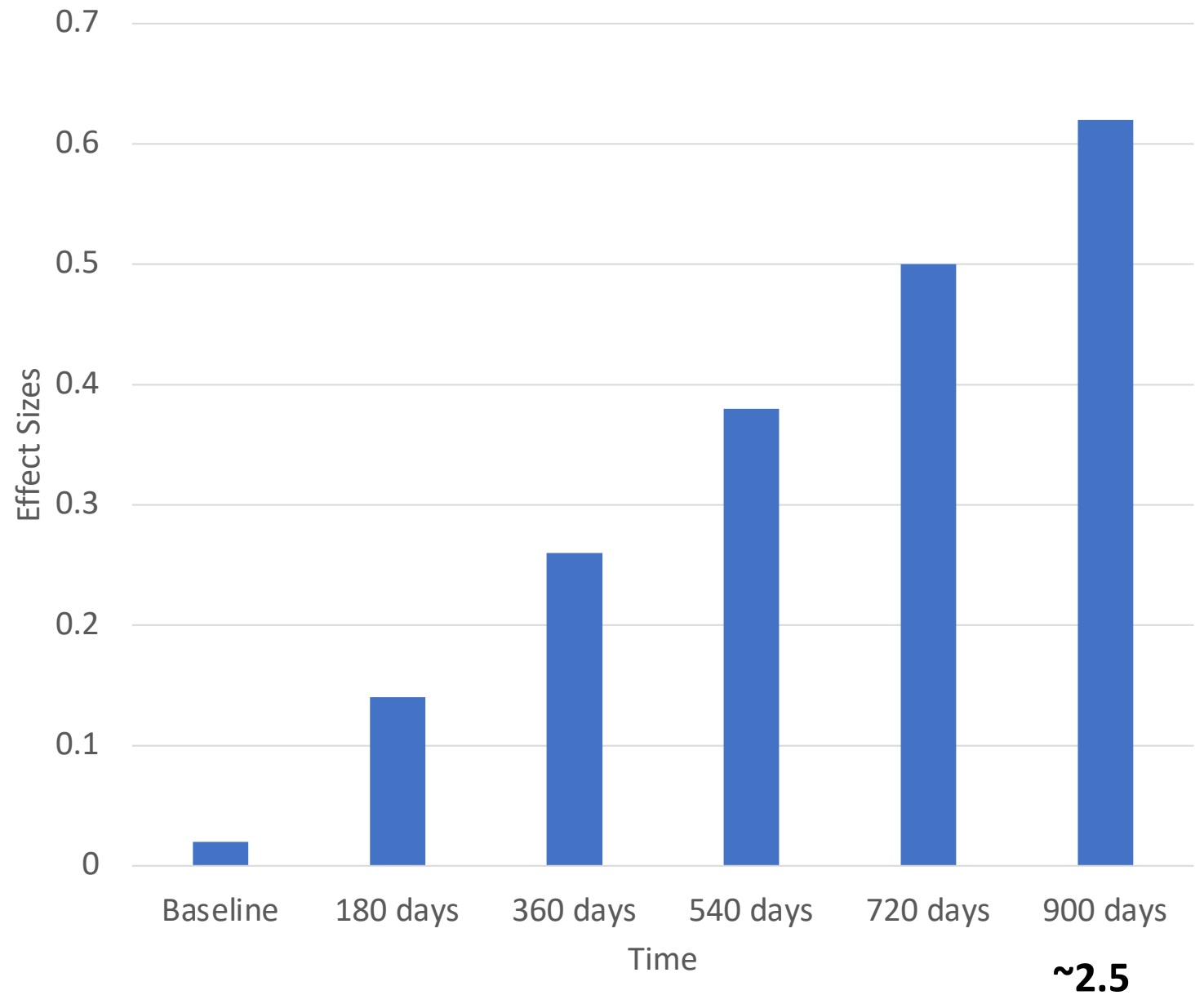
Hypotheses & Research Questions

- Given the emphasis on practice with feedback over time, there should be effects of dose.
 - How many sessions are needed?
 - Over how long of a period of time?
 - Is there a trade-off between frequency and duration?
- Training should lead to substantial benefits beyond the intervention based on the acquisition and use of skills.

GPA Outcomes by Condition - ITT



Differences between groups in parent ratings of problems paying attention



Survival Analyses

Survival means overall GPA is greater than a 1.0 (D grade)

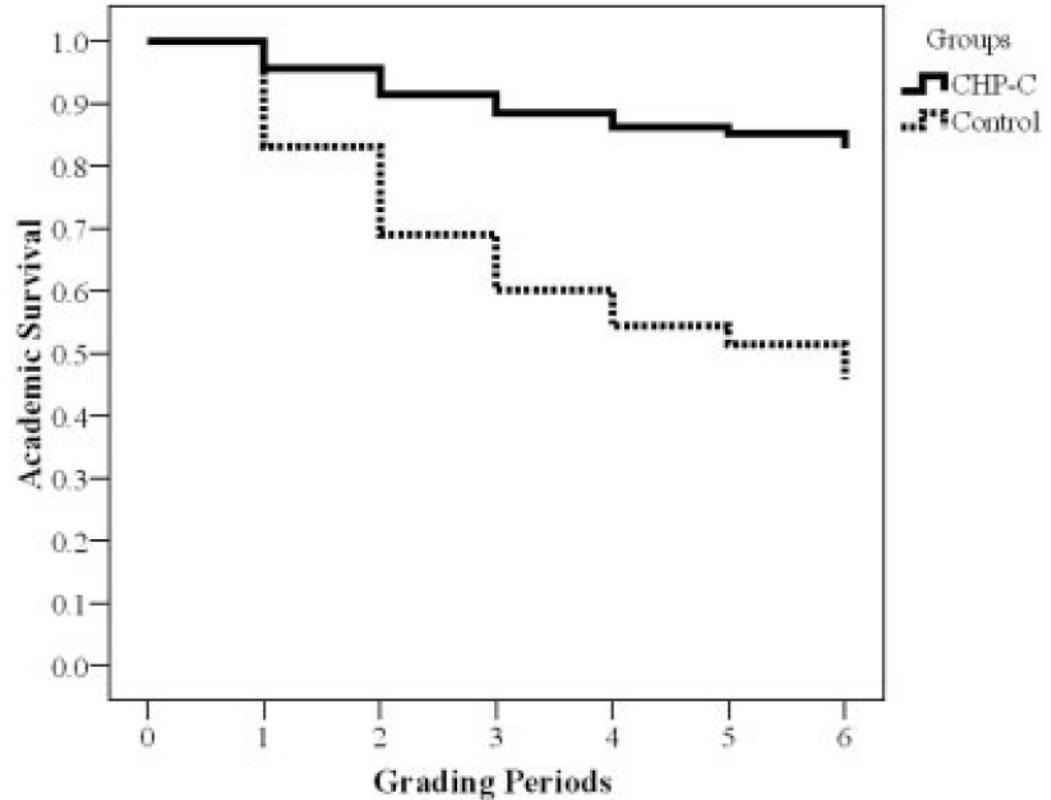
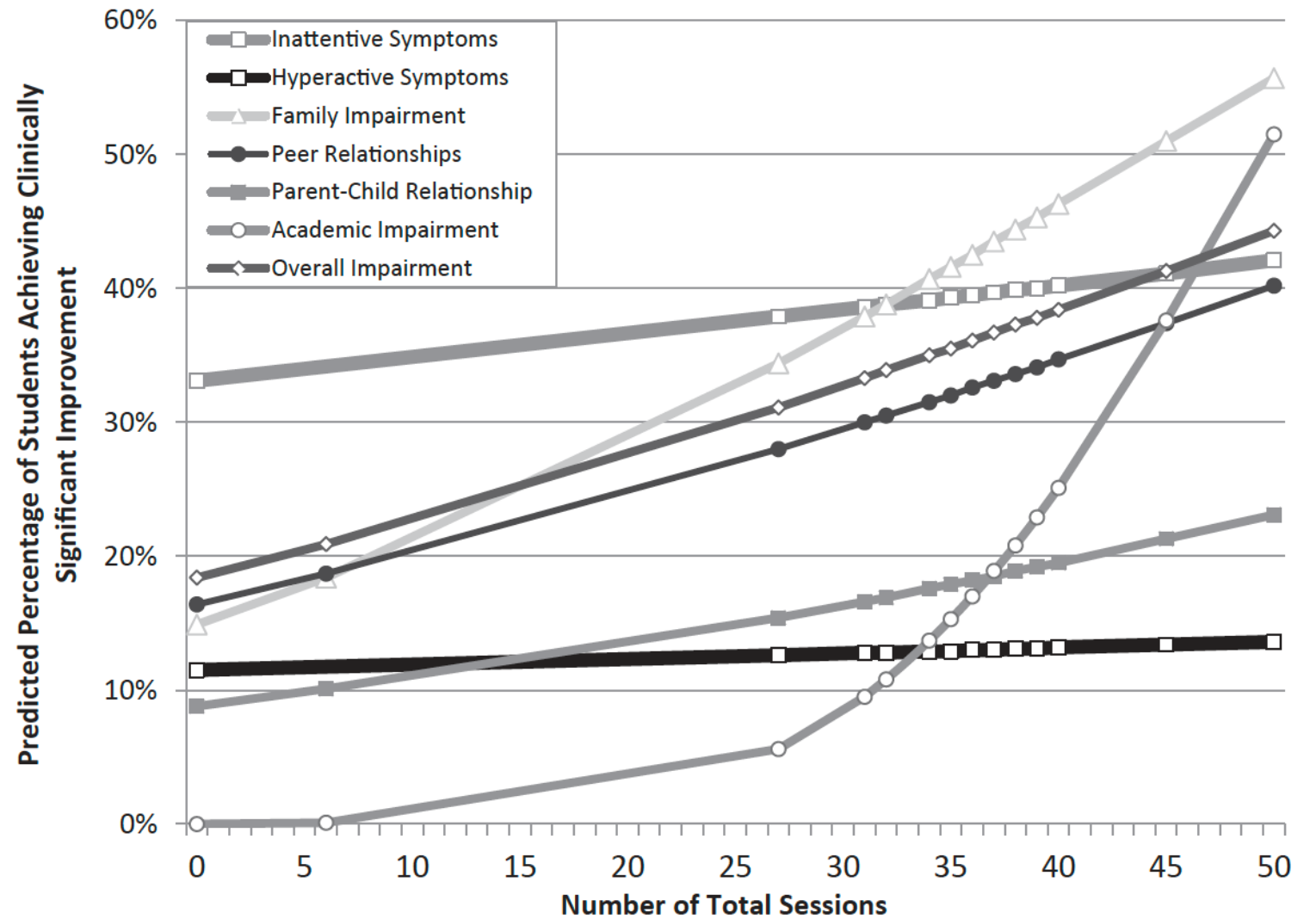


Figure 2. Academic survival profiles by study condition for seventh grade after controlling for the influence of student full-scale IQ.

Estimated probability of achieving clinically reliable improvement by dosage

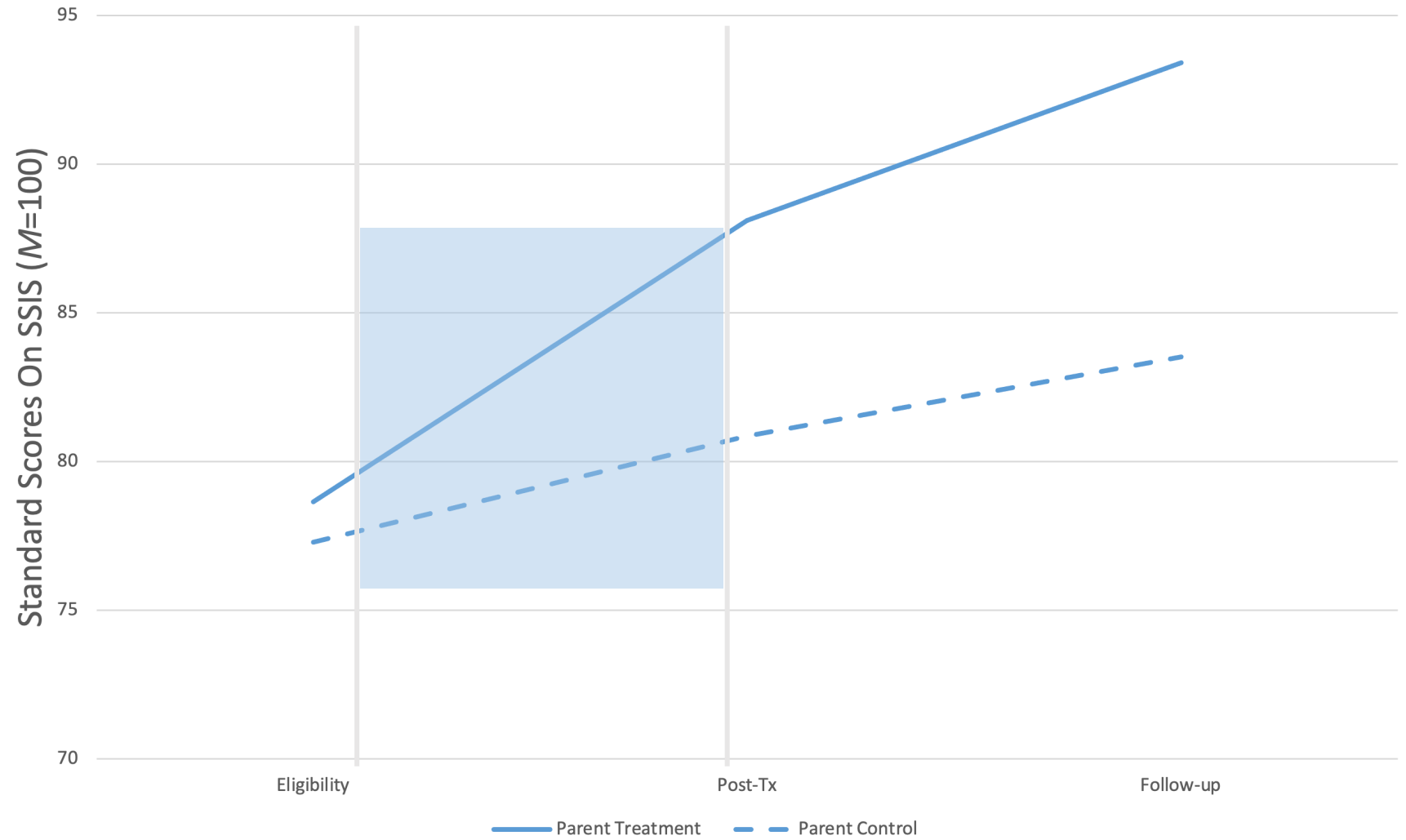


There does appear
to be a trade-off
between dosage
and duration

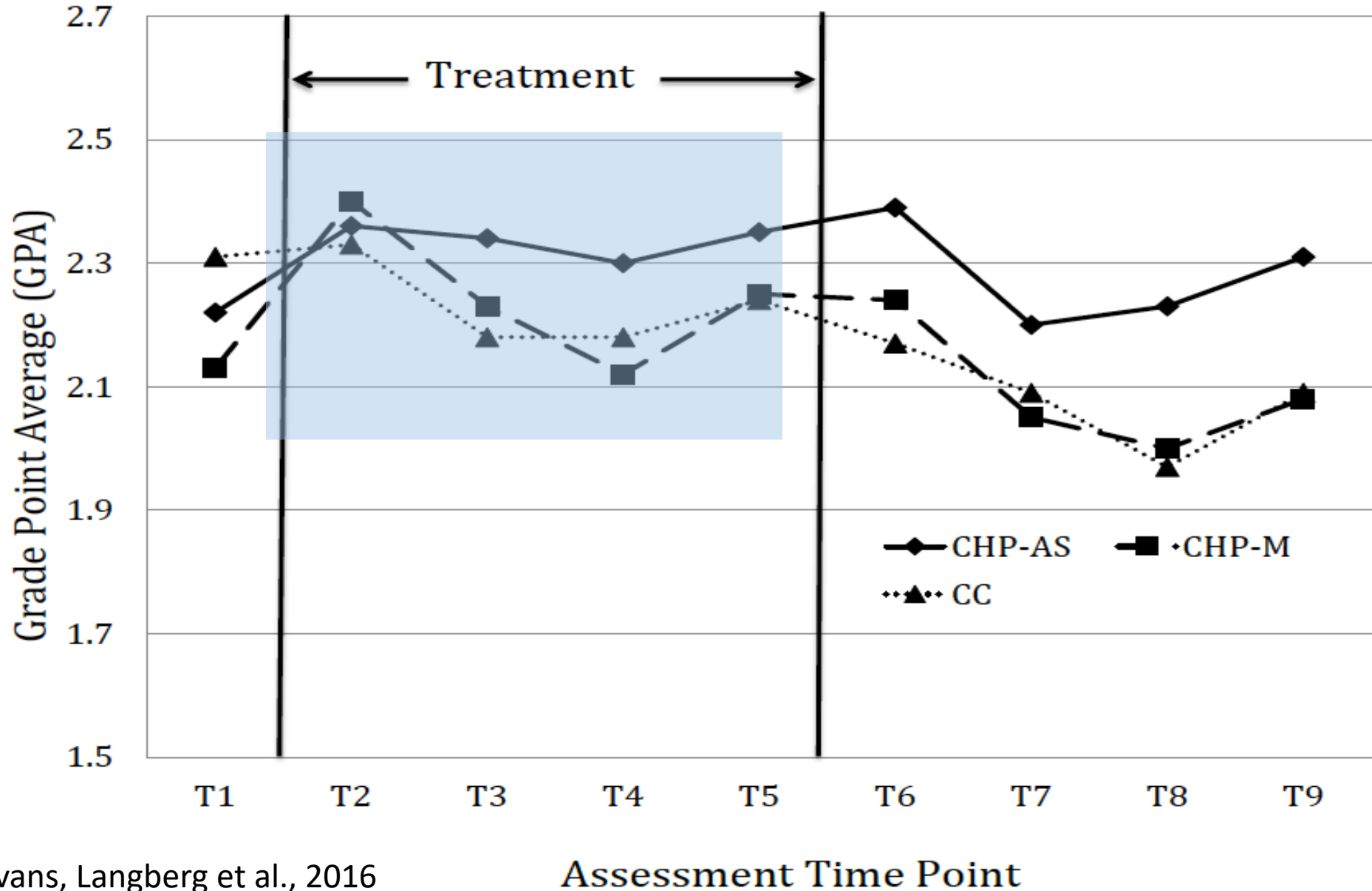
- After School Program yielded meaningful gains in one academic year
- Mentoring condition yielded small benefits over the course of one year, but benefits increased in size over multiple years
- Data indicate that increased likelihood of benefit for areas of impairment at high school level when sessions occur more than once per week
- Second hypothesis regarding benefits of treatment after treatment ends

High School CHP Outcomes Social Functioning

High School



GPA Outcomes by Condition - ITT



Summary

- Training interventions for adolescents with ADHD can produce gains that extend beyond treatment and may even increase after treatment ends
- Details
 - Differences in benefits between middle school aged adolescents and high school aged adolescents
 - Benefits for interpersonal skills greater in high school than middle school
 - Benefits for grades greater in middle school than high school
 - Duration appears to interact with frequency requiring shorter duration when adolescent receives higher frequency

Contexts for practice

- Parents
 - Children (Abikoff et al., 2013)
 - Adolescents (Sibley et al., 2016)
- Peers
 - High school students (Sibley et al., 2020)
 - Middle school students (Elizabeth Capps)
- Video Games
 - Funded by Institute for Education Sciences
 - Brandon Schultz (ECU) – PI
 - John Bowditch & Evans (Ohio)
 - Development & Evaluation grant

ATHEMOS

Created by:

J. Warren McClure School of Emerging Communication Technologies

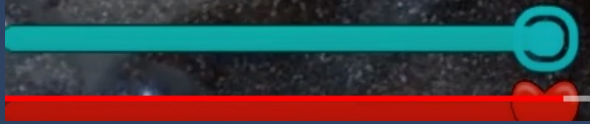
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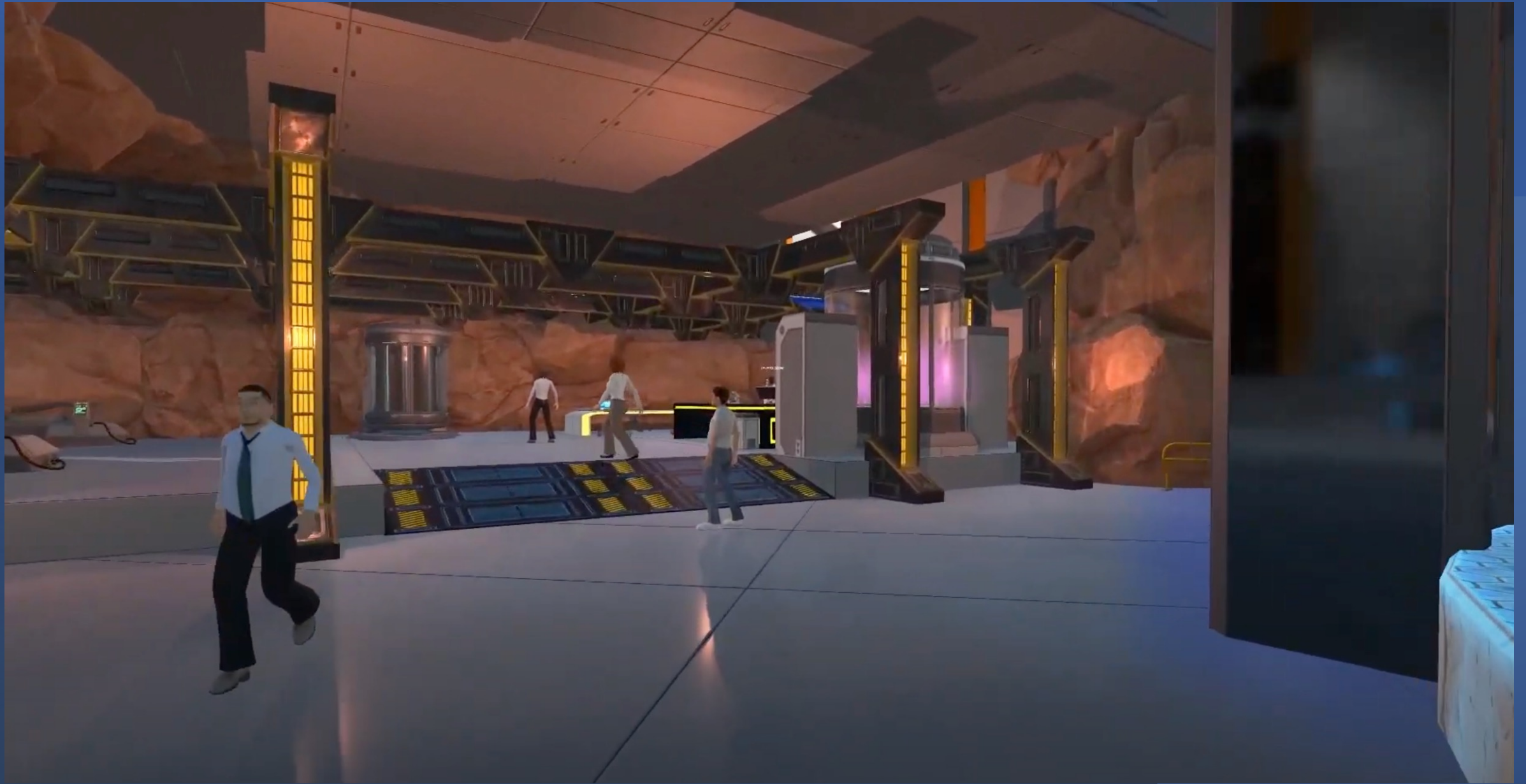

East Carolina
UNIVERSITY



OHIO
UNIVERSITY

118





The aliens are talking about resources, locations, and technology.

2 What else have you learned?

1 What do you do?

3 Goodbye (Exit conversation)



CRYPTOLOGIST

SECRET STRATEGY

Sort the intel into main ideas and supporting details.
Click submit when you are done.

SUBMIT
Time spent: 38 seconds

Extraterrestrial Motivations

Extraterrestrial Goals

Extraterrestrial Goals

Locations

Find useful materials

Home planet is running out of resources

I. Extraterrestrial Goals

A.

B.

C.

D.

V. Extraterrestrial Motivations

A. Resources

B. Technology

C.

D.

Final Thoughts

- Schools provide a context for increasing our opportunities to be innovative and creative with treatments by allowing for variability in dose, access to many more youth with disorders, and providing clinicians with a valuable window to their world.
- These opportunities can lead to substantial improvements in the outcomes of youth.
- There is a lot left to learn about how to make a difference

