

*4th International Scientific Symposium on Tourette Syndrome
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Advances in Treatment

**Behavioral Therapy:
Habit Reversal**

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Habit Reversal Training

Primary Components

- **Awareness Training**

Increase awareness of tic urges and performance

- **Competing Response**

Engage in competing behavior when feel tic urge

- **Social Support**

Help from family/teachers/friends

Behavioral Conceptualization

Role of Premonitory Urge

- Simple tics - no urge, direct expression of neurobiological activity
- Awareness of premonitions around age 8-9
- Expression of tic associated with decrease in premonitory urge
- Reduction in premonitory urge negatively reinforces tic expression

Habit Reversal Training

How does it work?

Simple Tics

- Disrupts automatic chain of events underlying tic expression ?

Premonition-triggered Tics

- Extinction of premonition through interference with negative reinforcement loop ?

Habit Reversal Training

Treatment Tips

- Start with a relatively “big” and noticeable tic first
- CR opposite to tic / hold it for 1 minute or longer
- Simple eyeblinks oftentimes not targeted by HRT
- Shaping procedure often used for motor tics
- Slow, rhythmic breathing used for vocal tics
- Developmentally sensitive implementation
 (“tic-buster”)

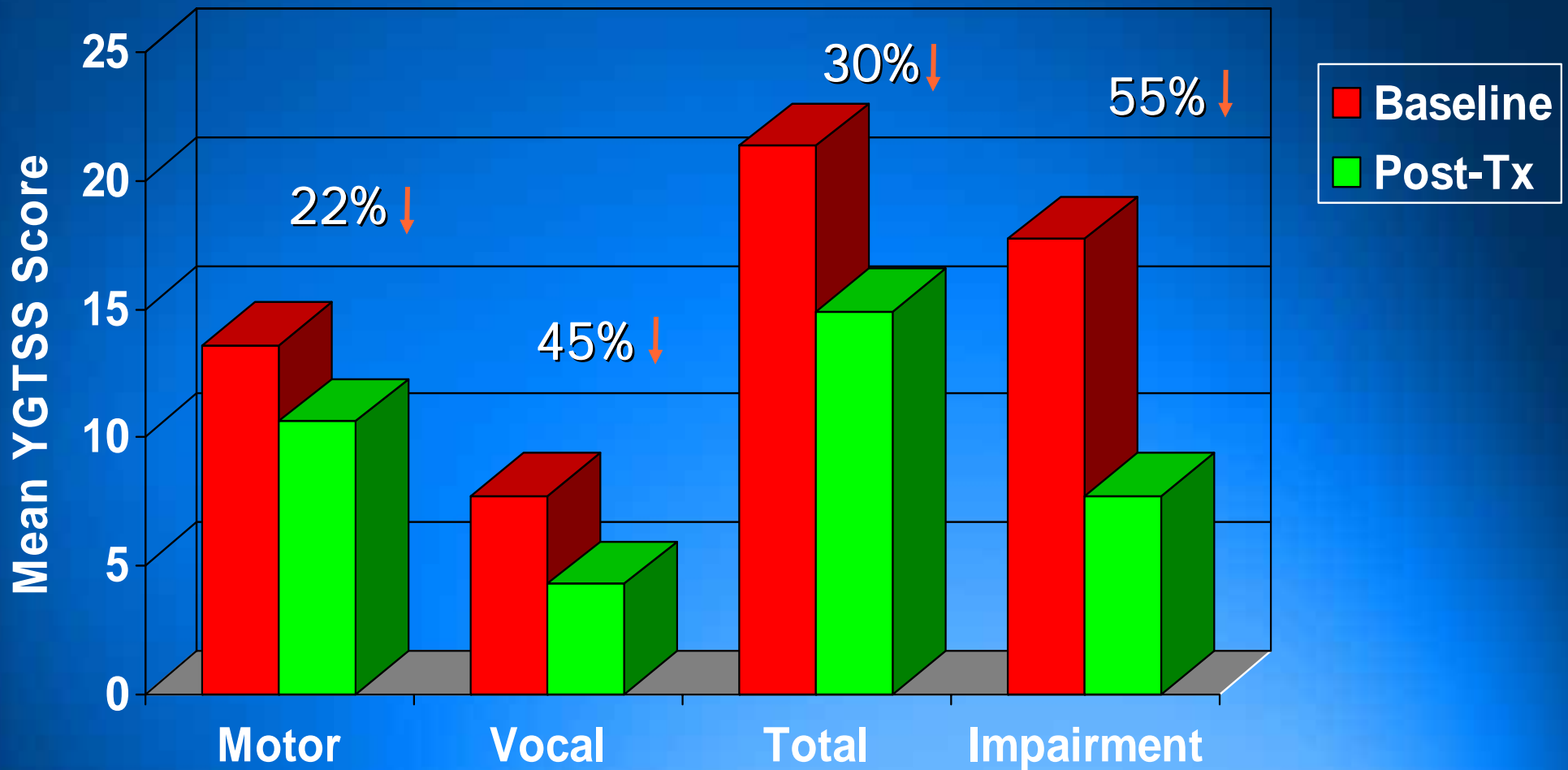
How Well Does HRT Work?

Two TSA-funded controlled trials of HRT

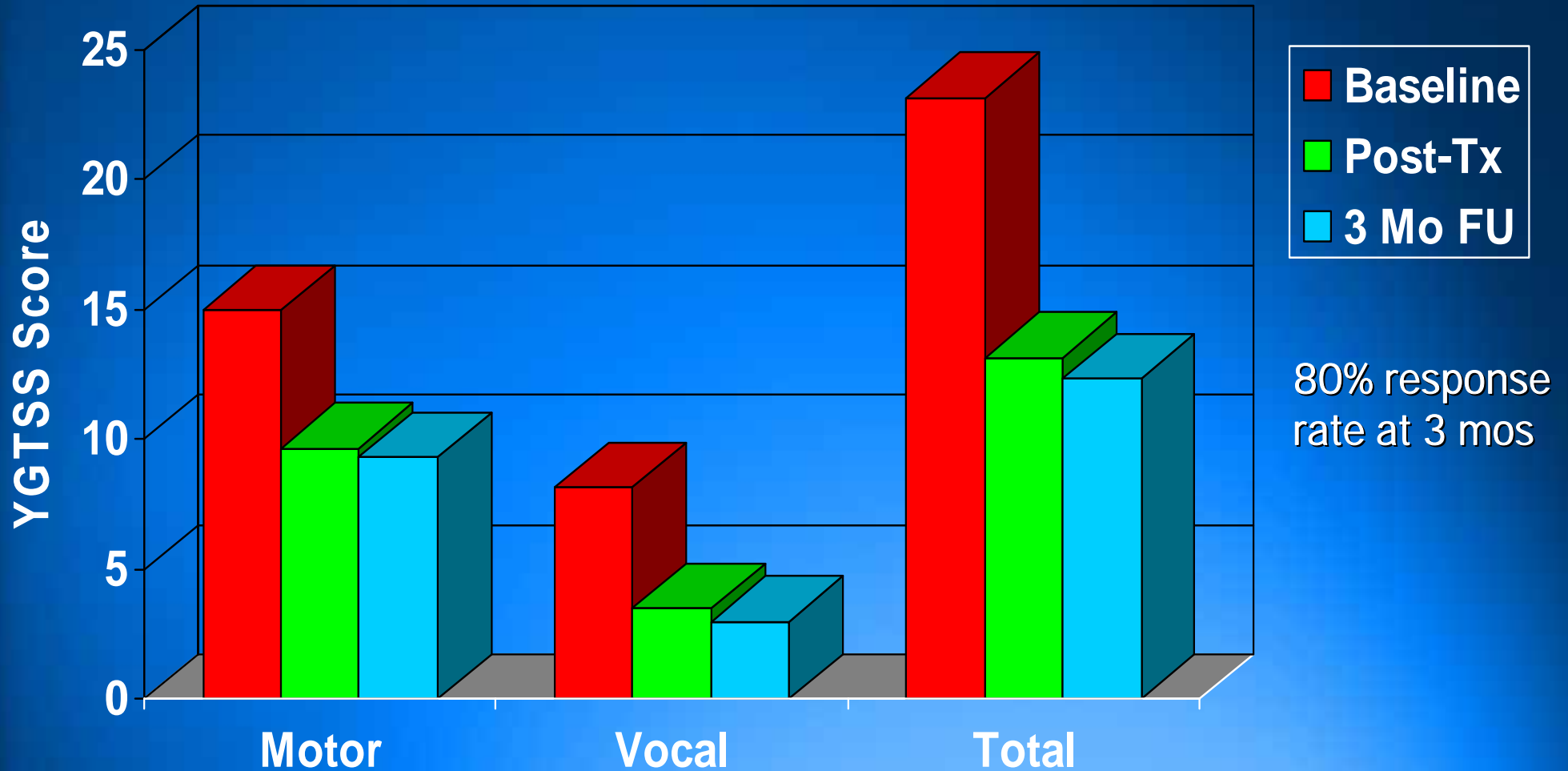
Piacentini et al. (UCLA) with CHILDREN

Wilhelm et al. (Harvard/MGH) with ADULTS

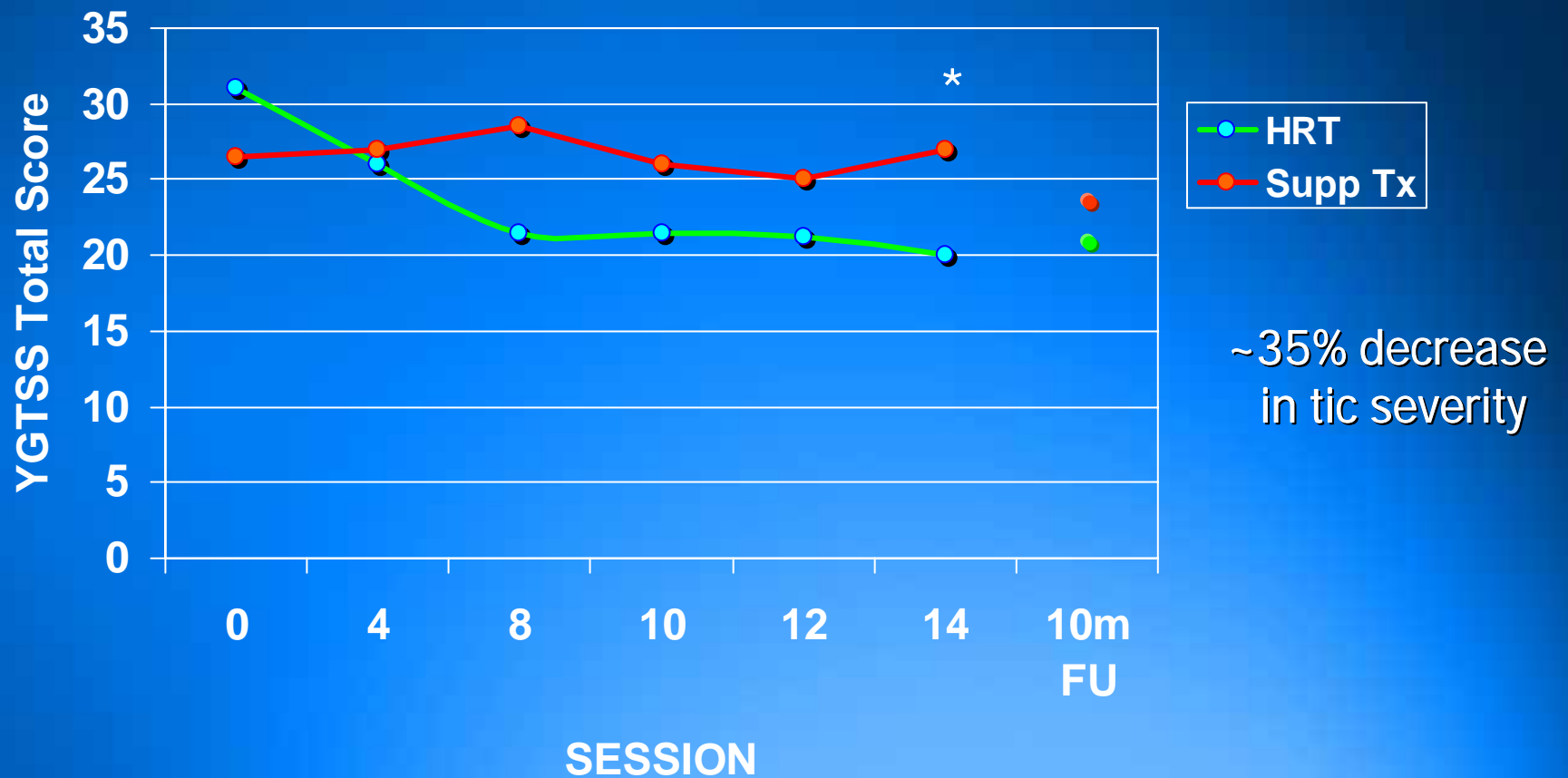
Habit Reversal Efficacy



Durability of HRT (3 Month FU)

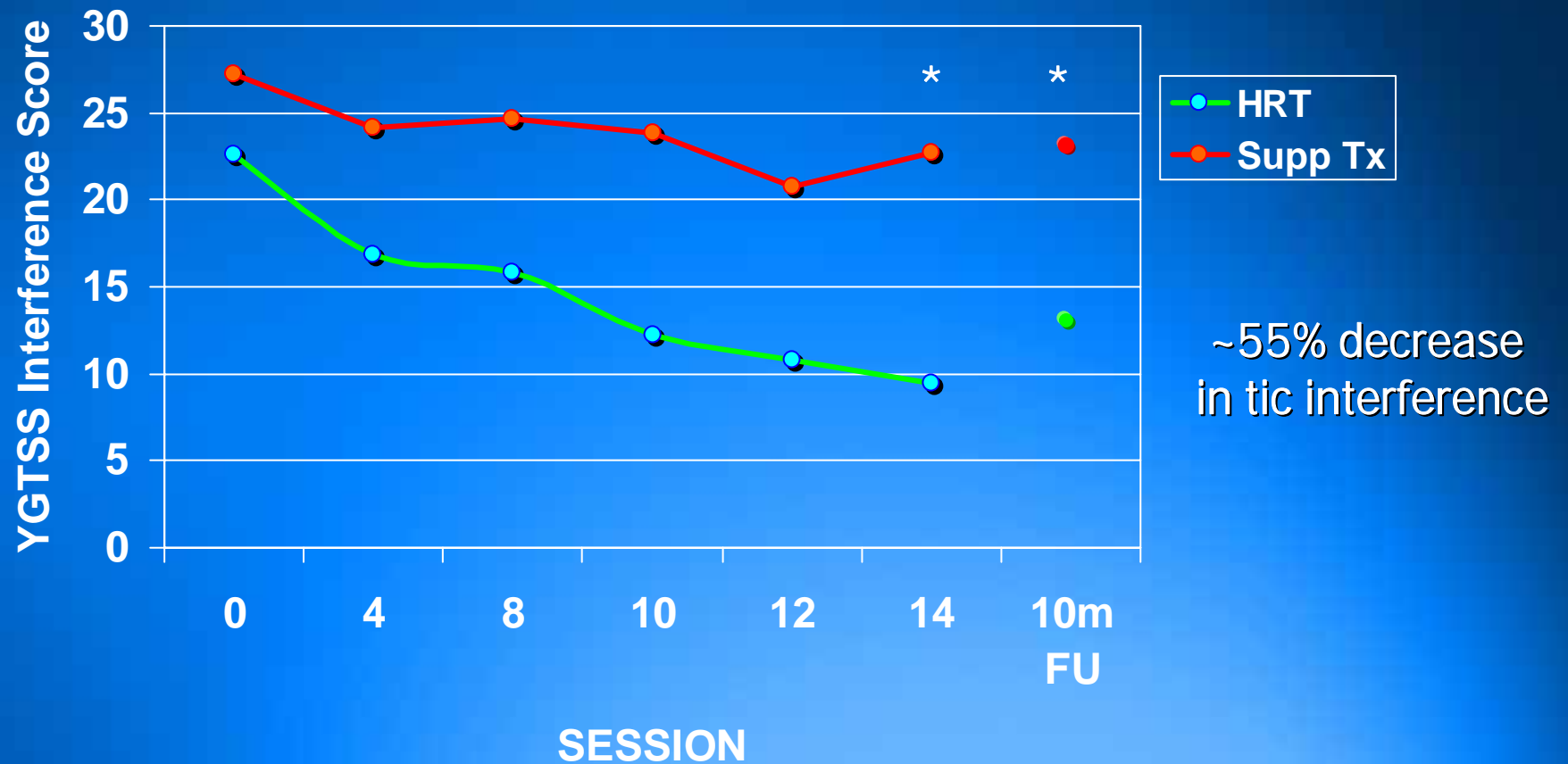


HRT for Adults - Symptoms



Wilhelm et al. (2003)

HRT for Adults - Interference



Wilhelm et al. (2003)

Functional Analysis

Used to identify situations or factors which serve to maintain or increase tic frequency and severity

- Social Attention – reaction from another person
- Escape from situation – change in demands on child

Typically, not a conscious or voluntary process

- Child/family/school often unaware this is happening

Common situations

- Mealtimes
- TV time
- Homework

Functional Analysis

Common Antecedents (what happens before tic)

- Demand placed on child
- Teasing
- Anxiety
- Stress

Common Consequences (what happens after tic)

- Comforting
- "Stop ticcing"
- "Mom, Billy's bothering me!"
- Teasing
- Leave table, classroom, or other situation
- Don't finish meal, homework, or chores

Functional Analysis

Positive consequences reinforce ticcing

Negative responses → distress → more tics

Functional Analysis

Example: Billy comes home from school stressed out. He goes to den where his sister is watching TV and begins ticcing loudly. Sister gets upset, screams for mom, and teases Billy. Billy's tics get even louder.

Mom can:

- 1) yell at sister
- 2) comfort Billy
- 3) Billy gets TV to himself

- 4) yell at Billy
- 5) send Billy to his room
- 6) sister gets TV to herself



Billy's tics are reinforced



Billy feels persecuted which increases negative feelings and may worsen tics or associated problems

Function-based Interventions

Does not imply that tics are behaviorally caused.

Despite the tics, the child is still expected to be treated as “normally” as possible.

Tics should not dictate what the child does or does not do, and the child does not receive any special treatment for his or her tics.

Function-based Interventions

WHAT TO DO?

Provide child with 15 minutes warning and free time to calm down prior to making specific requests (homework, chores) (addresses antecedents)

Don't respond to tics in the moment (addresses social consequences)

- teasing, telling to stop, comforting, etc.
- this means parents, sibs, teachers, everyone

No escape from responsibilities (addresses escape consequences)

- If tics interfere, leave situation for 15 minutes then return
- If leaves dinner table, must come back and finish meal
- Needs to begin homework at set time regardless of tics – can take brief breaks according to set schedule
- If tics still bothersome, encourage child to use HRT or other techniques to address them

Child Behavior Therapy Study

120 Children with TS/CTD (40 at each of 3 sites)

- UCLA
- Johns Hopkins University
- University of Wisconsin- Milwaukee

Three supporting sites

- Mass General Hospital/Harvard
- Yale Child Study Center
- Wilford Hall Medical Center (Texas)

Comparison of two psychosocial treatments

- Comprehensive Behavioral Intervention for TS (CBIT)
 - HRT + Function-based Intervention
- Psychoeducation/Supportive Therapy (PST)

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