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Obsessive Compulsive Disorder
Child and Adolescent Psychopharmacology
March 17, 2023

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Disclosures

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My spouse/partner and I have the following relevant financial relationship with a commercial interest to disclose:

- American Academy of Child and Adolescent Psychiatry: Honoraria
- Emalex: Research Support
- Harvard Medical School /Psychiatry Academy: Honoraria
- New Venture Fund: Research Support
- NIMH/NINDS: Research Support
- Partners Healthcare: Honoraria
- Skyland Trail: Advisory Board
- Teva/Nuvelution: Research Support; Scientific Advisory Board
- Tourette Association of America: Co-Chair, Medical Advisory Board; TAA-CDC Partnership

Off-label indications will be discussed.

Obsessive Compulsive Disorder Learning Objectives:

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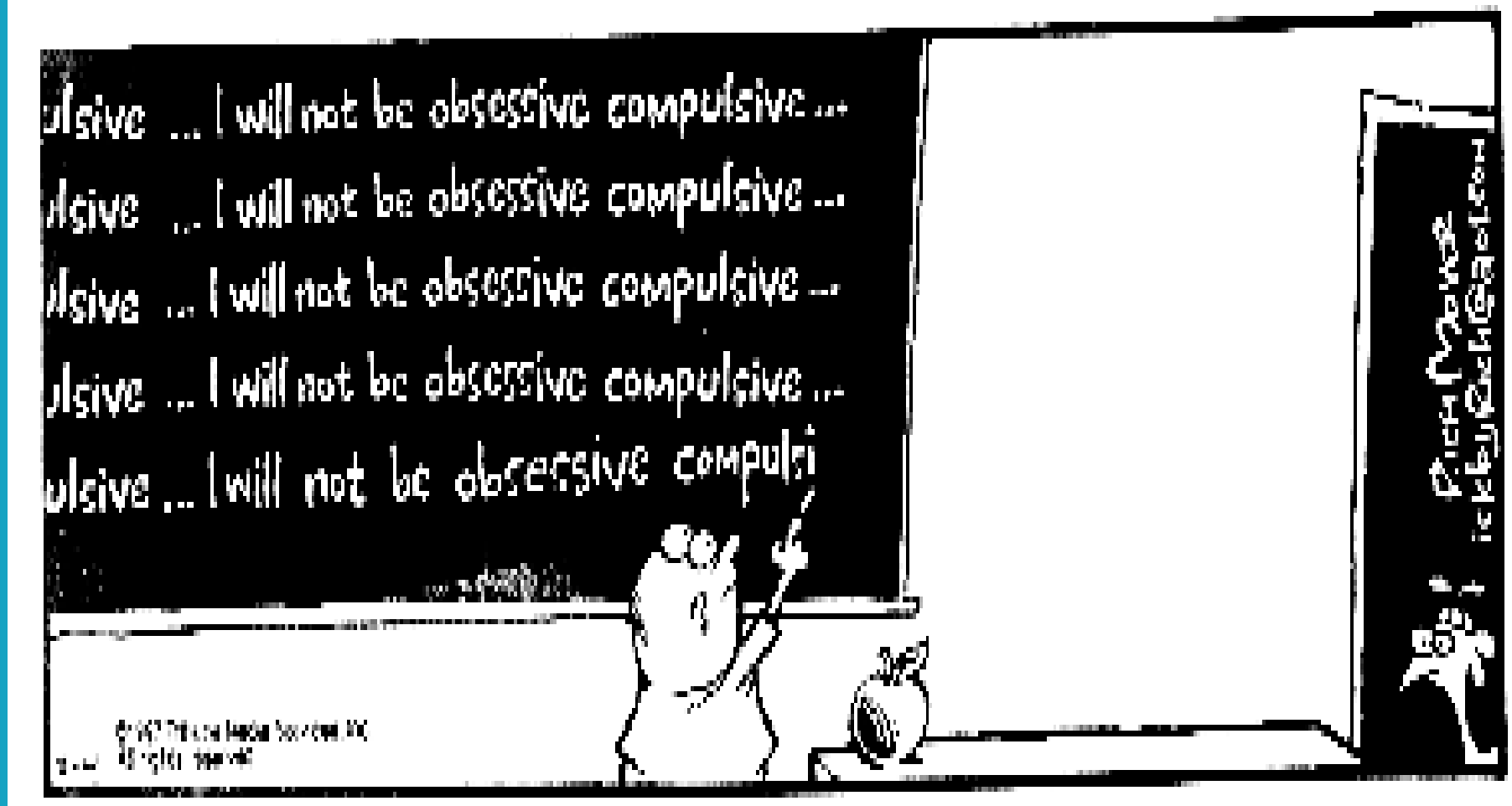
- At the end of this session, the participant should be able to:

- Understand the **presentation and course** of OCD in children and adolescents
- Become familiar with **standardized rating instruments** in evaluation of OCD in children and adolescents
- Discuss the classic **Pediatric OCD Treatment (POTS)** Study
- Understand **psychopharmacological treatment approaches** for OCD in children and adolescents
- Apply knowledge to **clinical practice**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Characteristics of Pediatric OCD

- Distinct **pre-pubertal age** of onset
- **Male** predominance
- Strong **family history**
- High comorbidity with **tic disorders and ADHD**
- **May lack insight** into unrealistic nature of thoughts

Pediatric OCD: Phenomenology and Course

(Geller, D. Psych Clin N Am; 2006; 29 (2); 353-370)

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Most often chronic/persistent, with waxing and waning course

Symptoms are consistent with developmental tasks/stages

Differences with adult OCD:

Children frequently have **poor insight**

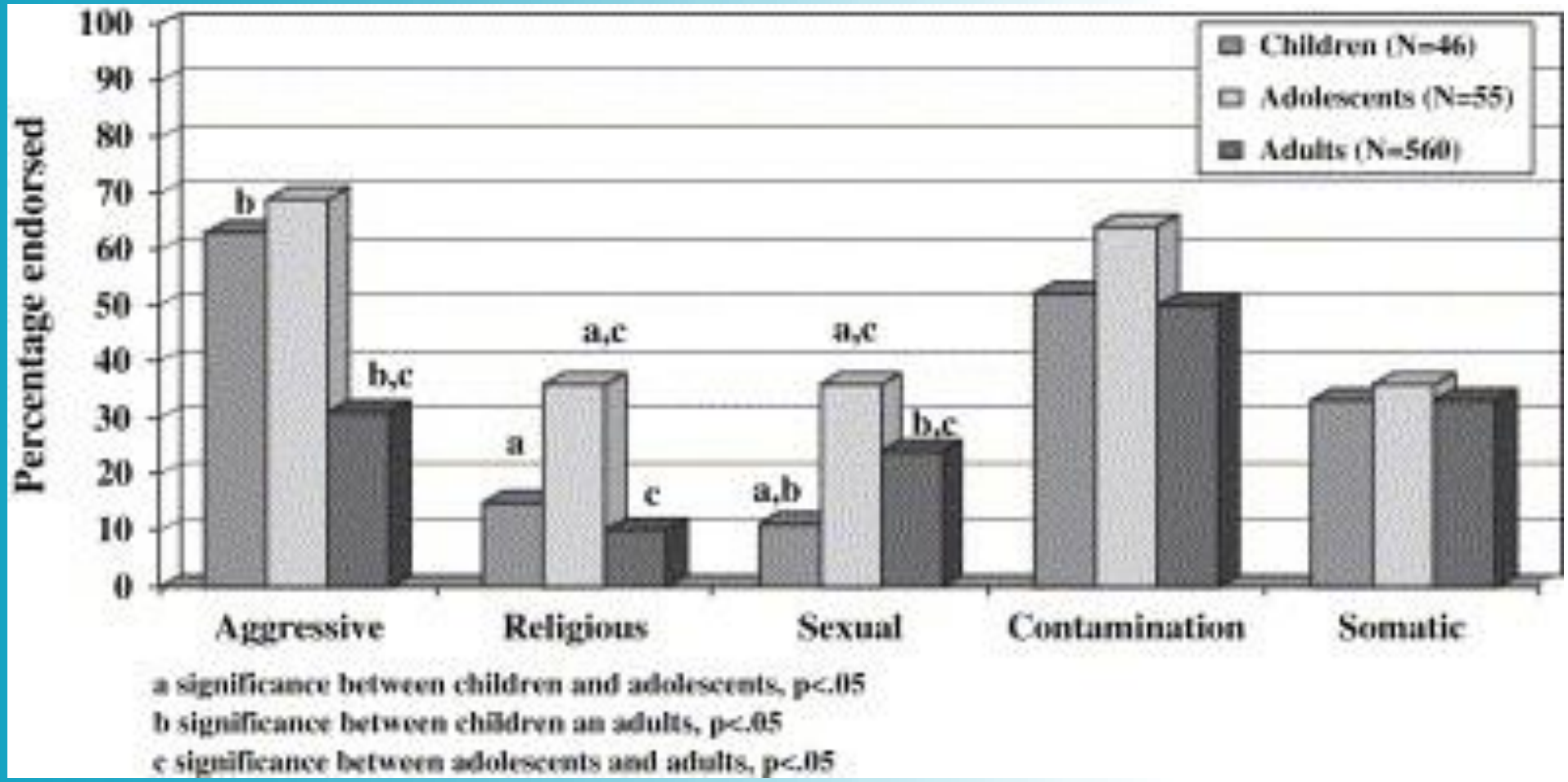
Obsessions involving **fear of harm and separation**, **compulsions without obsessions, and rituals involving family members** are more common in younger patients.

Rituals involving **parents** (need for reassurance, verbal checking) are more common in children than adolescents/ adults.

Sexual and religious symptoms are more common in adolescents than children and adults.

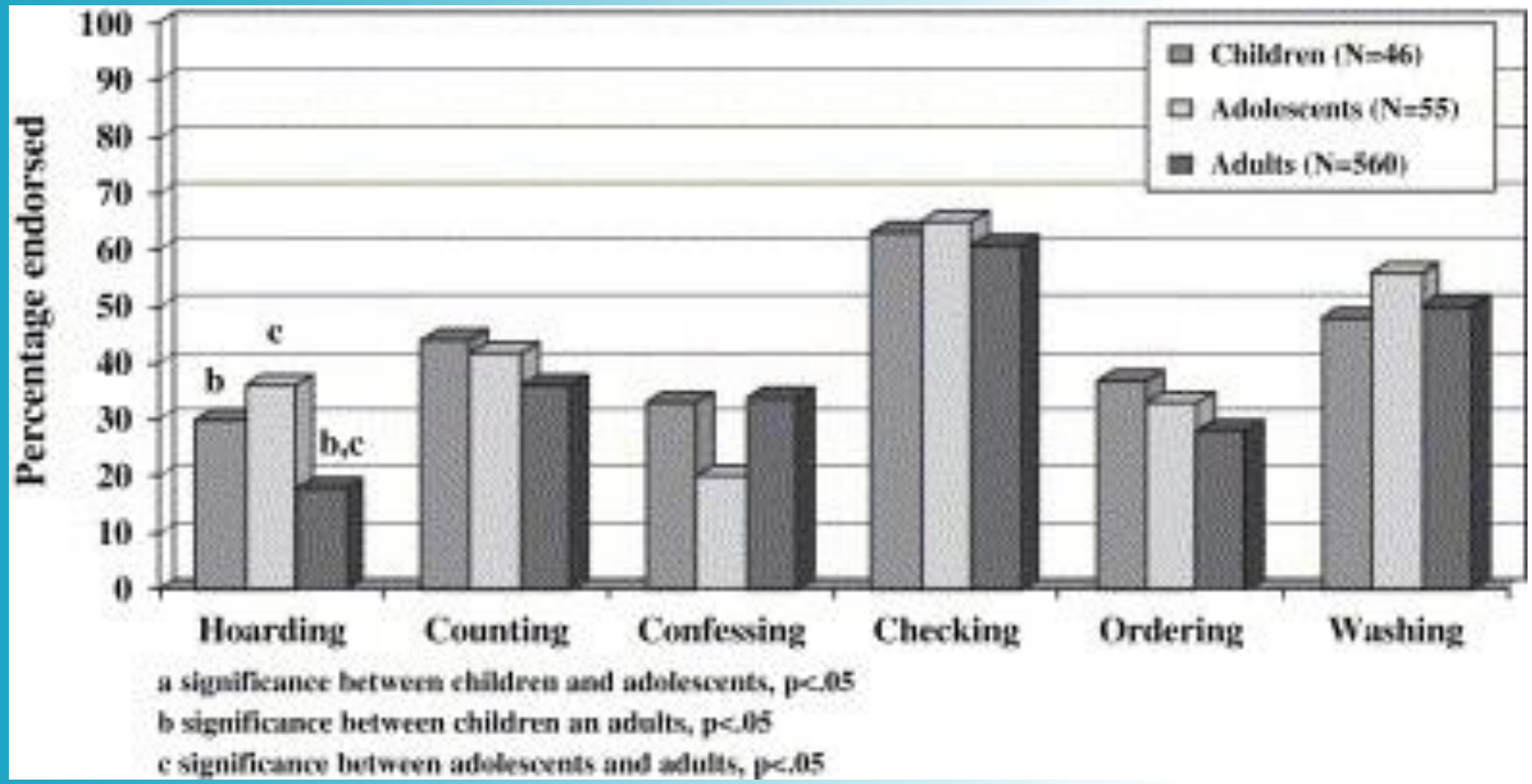
Differences in Obsessions between children, adolescents, and adults

Adapted from Geller D. Obsessive-Compulsive and Spectrum Disorders in Children and Adolescents. Psych Clin N Am. 29 (2006): 353-370.



Differences in Compulsions between children, adolescents, and adults

Adapted from Geller D. Obsessive-Compulsive and Spectrum Disorders in Children and Adolescents. Psych Clin N Am. 29 (2006): 353-370.



Pediatric OCD: Phenomenology and Course
(Geller, D. Psych Clin N Am; 2006; 29 (2); 353-370)

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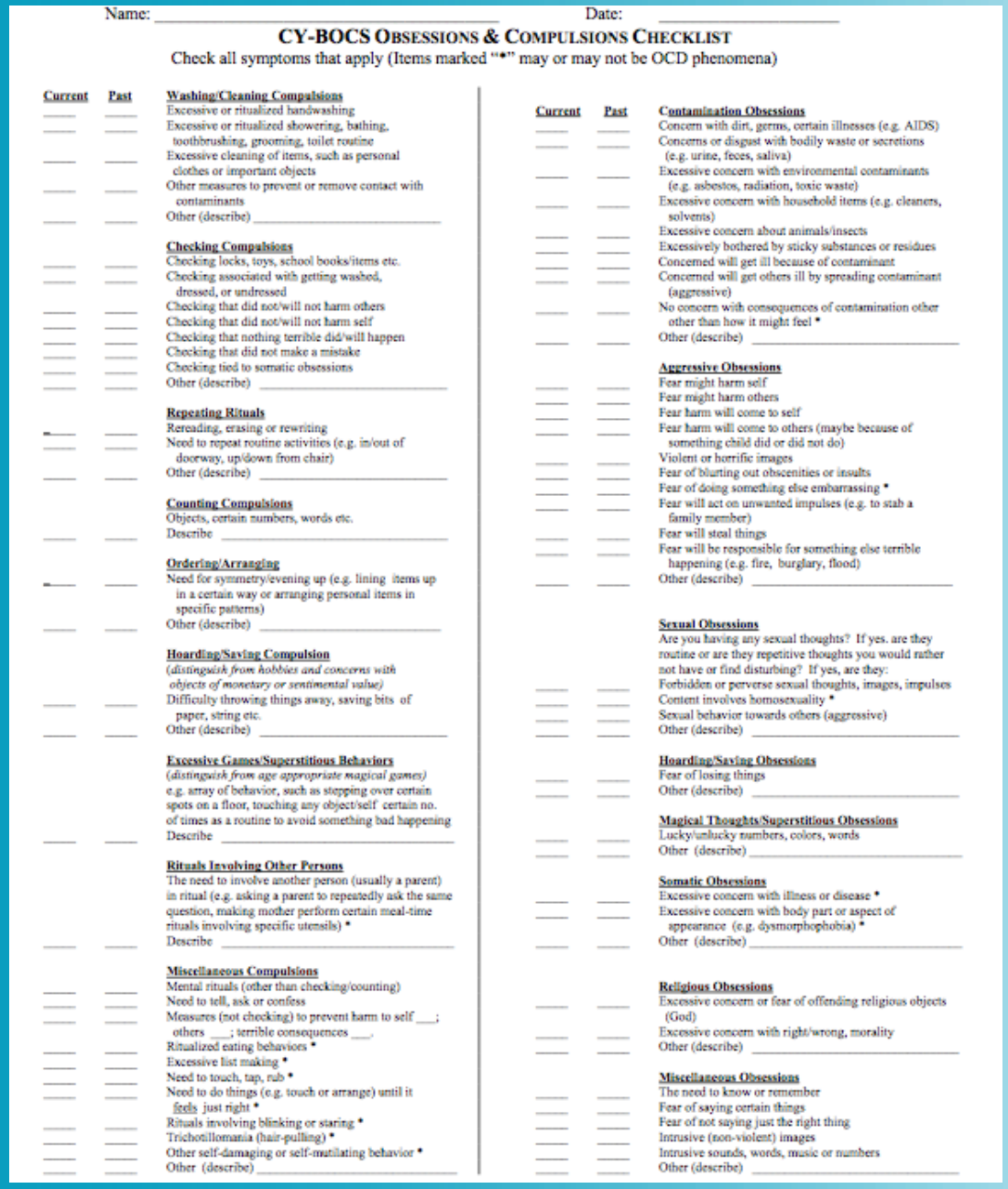
- **Most common obsessions:** (N=94)

  Contamination (70%), aggressive (70%), somatic (45%), religious (35%)
- **Most common compulsions:** (N=94)

  Washing (70%), repeating (70%), checking (60%), counting (40%)
- **OCD with Tic Disorders**: Symmetry, aggressive obsessions (fears of bad things happening)
- **Many parents may not be aware** of child's symptoms or attribute them to other reasons (ie night-time rituals, difficulty falling asleep, excessive need for reassurance)
- **Prevalence:** 2-4% pre-pubertal children
- **Mean age of onset**: 10 years. Symptoms may be hidden

  Comorbidity with anxiety, mood and tic disorders is high

  Course: Most often chronic, with waxing and waning symptoms



Name: _____ Date: _____

CY-BOCS Obsessions & Compulsions Checklist

Check all symptoms that apply (Items marked "*" may or may not be OCD phenomena)

Current | Past

Washing/Cleaning Compulsions
- Excessive or ritualized handwashing
- Excessive or ritualized showering, bathing, toothbrushing, grooming, toilet routine
- Excessive cleaning of items, such as personal clothes or important objects
- Other measures to prevent or remove contact with contaminants
- Other (describe) _____

Checking Compulsions
- Checking locks, toys, school books/items etc.
- Checking associated with getting washed, dressed, or undressed
- Checking that did not/will not harm others
- Checking that did not/will not harm self
- Checking that nothing terrible did/will happen
- Checking that did not make a mistake
- Checking tied to somatic obsessions
- Other (describe) _____

Repeating Rituals
- Rereading, erasing or rewriting
- Need to repeat routine activities (e.g. in/out of doorway, up/down from chair)
- Other (describe) _____

Counting Compulsions
- Objects, certain numbers, words etc.
- Describe _____

Ordering/Arranging
- Need for symmetry/evening up (e.g. lining items up in a certain way or arranging personal items in specific patterns)
- Other (describe) _____

Hoarding/Saving Compulsion
(distinguish from hobbies and concerns with objects of monetary or sentimental value)
- Difficulty throwing things away, saving bits of paper, string etc.
- Other (describe) _____

Excessive Games/Superstitious Behaviors
(distinguish from age appropriate magical games)
- e.g. array of behavior, such as stepping over certain spots on a floor, touching any object/self certain no. of times as a routine to avoid something bad happening
- Describe _____

Rituals Involving Other Persons
- The need to involve another person (usually a parent) in ritual (e.g. asking a parent to repeatedly ask the same question, making mother perform certain meal-time rituals involving specific utensils) *
- Describe _____

Miscellaneous Compulsions
- Mental rituals (other than checking/counting)
- Need to tell, ask or confess
- Measures (not checking) to prevent harm to self ___; others ___; terrible consequences ___.
- Ritualized eating behaviors *
- Excessive list making *
- Need to touch, tap, rub *
- Need to do things (e.g. touch or arrange) until it feels just right *
- Rituals involving blinking or staring *
- Trichotillomania (hair-pulling) *
- Other self-damaging or self-mutilating behavior *
- Other (describe) _____

Current | Past

Contamination Obsessions
- Concern with dirt, germs, certain illnesses (e.g. AIDS)
- Concerns or disgust with bodily waste or secretions (e.g. urine, feces, saliva)
- Excessive concern with environmental contaminants (e.g. asbestos, radiation, toxic waste)
- Excessive concern with household items (e.g. cleaners, solvents)
- Excessive concern about animals/insects
- Excessively bothered by sticky substances or residues
- Concerned will get ill because of contaminant
- Concerned will get others ill by spreading contaminant (aggressive)
- No concern with consequences of contamination other than how it might feel *
- Other (describe) _____

Aggressive Obsessions
- Fear might harm self
- Fear might harm others
- Fear harm will come to self
- Fear harm will come to others (maybe because of something child did or did not do)
- Violent or horrific images
- Fear of blurting out obscenities or insults
- Fear of doing something else embarrassing *
- Fear will act on unwanted impulses (e.g. to stab a family member)
- Fear will steal things
- Fear will be responsible for something else terrible happening (e.g. fire, burglary, flood)
- Other (describe) _____

Sexual Obsessions
- Are you having any sexual thoughts? If yes. are they routine or are they repetitive thoughts you would rather not have or find disturbing? If yes, are they:
- Forbidden or perverse sexual thoughts, images, impulses
- Content involves homosexuality *
- Sexual behavior towards others (aggressive)
- Other (describe) _____

Hoarding/Saving Obsessions
- Fear of losing things
- Other (describe) _____

Magical Thoughts/Superstitious Obsessions
- Lucky/unlucky numbers, colors, words
- Other (describe) _____

Somatic Obsessions
- Excessive concern with illness or disease *
- Excessive concern with body part or aspect of appearance (e.g. dysmorphophobia) *
- Other (describe) _____

Religious Obsessions
- Excessive concern or fear of offending religious objects (God)
- Excessive concern with right/wrong, morality
- Other (describe) _____

Miscellaneous Obsessions
- The need to know or remember
- Fear of saying certain things
- Fear of not saying just the right thing
- Intrusive (non-violent) images
- Intrusive sounds, words, music or numbers
- Other (describe) _____

OCD Diagnostic Evaluation

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- **Children's Yale-Brown Obsessive Compulsive Scale (C-YBOCS)**
- Quantitative rating scale of OCD symptoms
- An overall score from 0 to 40
- 10 scored questions, with possible scores 0-4 from each.
- Most studies quantify improvement by 35% reduction of symptoms.
- **Scores <15 are considered sub-clinical.**
- **Scores <8 are considered sub-threshold.**

CHILDREN'S YALE-BROWN OBSESSIVE COMPULSIVE SCALE (3/1/90)

CY-BOCS TOTAL (add items 1-10) ☐

Patient Name: _____ Date: _____ Rater: _____

		None	Mild	Moderate	Severe	Extreme
1.	Time spent on Obsessions	0	1	2	3	4
	1b. Obsession-free interval *(do not add to subtotal or total score)*	No symptoms 0	Long 1	Moderately long 2	Short 3	Extremely short 4
2.	Interference from Obsessions	0	1	2	3	4
3.	Distress of Obsessions	0	1	2	3	4
4.	Resistance	Always resists 0	1	2	3	Completely yields 4
5.	Control over Obsessions	Complete control 0	Much control 1	Moderate control 2	Little control 3	No control 4

Obsession Subtotal (add items 1-5) ☐

		None	Mild	Moderate	Severe	Extreme
6.	Time spent on Compulsions	0	1	2	3	4
	1b. Compulsion-free interval *(do not add to subtotal or total score)*	No symptoms 0	Long 1	Moderately long 2	Short 3	Extremely short 4
7	Interference from Compulsions	0	1	2	3	4
8.	Distress of Compulsions	0	1	2	3	4
9.	Resistance	Always resists 0	1	2	3	Completely yields 4
10.	Control over Compulsions	Complete control 0	Much control 1	Moderate control 2	Little control 3	No control 4

Compulsion Subtotal (add items 6-10) ☐

11.	Insight into O-C Symptoms	Excellent 0	1	2	3	Absent 4

		None	Mild	Moderate	Severe	Extreme
12.	Avoidance	0	1	2	3	4
13.	Indecisiveness	0	1	2	3	4
14	Pathologic Responsibility	0	1	2	3	4
15.	Slowness	0	1	2	3	4
16.	Pathologic Doubting	0	1	2	3	4

17.	Global Severity	0	1	2	3	4	5	6
18	Global Improvement	0	1	2	3	4	5	6
19.	Reliability	Excellent = 0		Good = 1		Fair = 2		Poor = 3

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Time spent on obsessions/compulsions:

- **Mild: <1 hour**
- **Moderate: 1-3 hours**
- **Severe: 3-8 hours**
- **Extreme: >8 hours**

Other important factors regarding symptoms:

- **Interference**
- **Distress**
- **Resistance**
- **Control**

Subtype: Tic-related Pediatric OCD

- **"Tic-related" OCD** includes tics in child or first-degree relative.
- 10-40 % of pediatric OCD cases.
- Male predominance.
- **Symptoms of Symmetry, Forbidden thoughts, and Hoarding dimensions.**
- Fewer symptoms in Cleaning dimension.
- More likely to have sensory phenomena.
- Higher rates of ADHD/ ODD, trichotillomania, specific and pervasive developmental disorders.

Predictors of Early Adult Outcomes in Pediatric-Onset Obsessive-Compulsive Disorder

(*Bloch. M. et al Pediatrics. 2009 October ; 124(4): 1085–1093. doi:10.1542/peds.2009-0015)*

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- **OBJECTIVE**—The aim of this study was to determine the **childhood clinical predictors of early adult outcomes** in pediatric-onset obsessive-compulsive disorder (OCD) and to assess whether **dimensional subtypes of OCD and the presence of comorbid tic symptoms** influence long-term outcomes.

- **METHODS**— A longitudinal cohort study in which **45 of 62 eligible children with OCD were reassessed an average of 9 years later, in early adulthood**.
- Main outcome measures included expert-rated, obsessive-compulsive (OC) symptom severity and time to remission of OC symptoms.

- Baseline clinical characteristics were evaluated in terms of their influence on OCD severity in adulthood and time to remission of OC symptoms.

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- **RESULTS**—Forty-four (44%) percent of subjects were determined to have subclinical OC symptoms at the follow-up evaluation.
- The **absence of a comorbid tic disorder and the presence of prominent hoarding symptoms** were associated with the persistence of OCD symptoms.
- **Female gender, earlier age at childhood assessment, later age of OCD onset, more-severe childhood OCD symptoms, and comorbid oppositional defiant disorder** also were associated with persistence of OCD symptoms into adulthood.
- **CONCLUSIONS**—These results confirm that a **significant proportion of treated children with OCD experience remission by adulthood**.
- The presence of comorbid tics heralds a positive outcome, whereas primary hoarding symptoms are associated with persistent OCD.

OCD Persistence

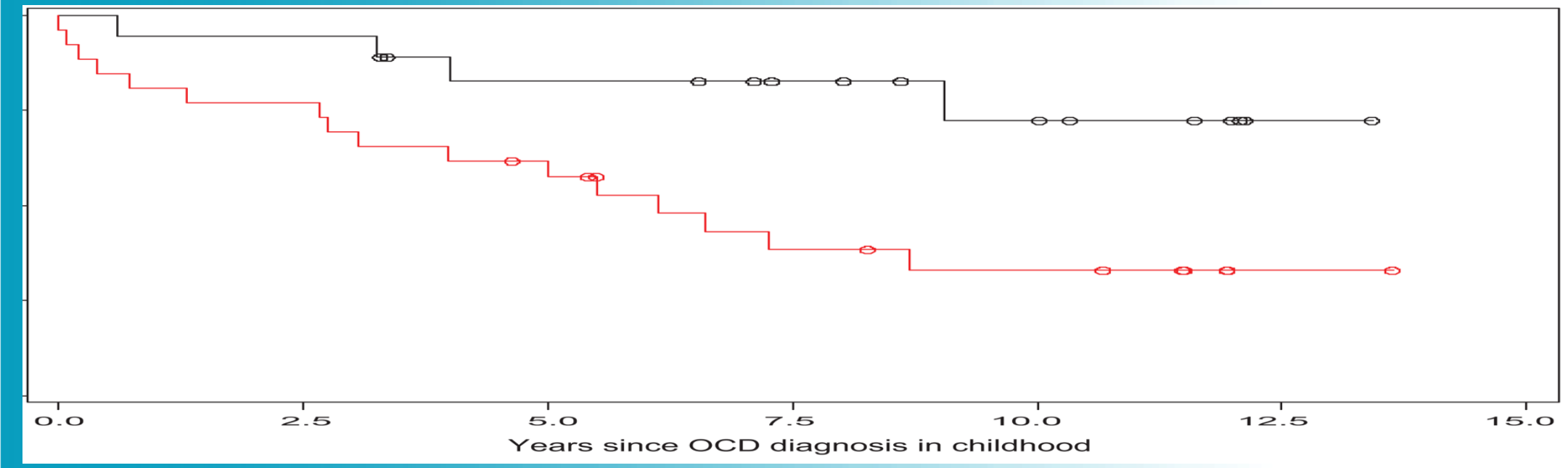

FIGURE 1.
Survival curves comparing patients with OCD with and without comorbid CTD (red curve indicates patients with comorbid CTD; black curve, patients without CTD; circles, censored observations). Proportions of patients with OCD who experienced remission are indicated on the y-axis, and time since childhood baseline assessment is displayed on the x-axis. Patients with OCD with comorbid CTD experienced decreased time to remission of OC symptoms (; P = .02).

Long-Term Outcome of Pediatric Obsessive-Compulsive Disorder: A Meta-Analysis

(Jingran Liu et al;
J Child Adolesc Psychopharmacol Vol 31 (2) 2021 Mar;31(2):95-101.
doi: 10.1089/cap.2020.0051. Epub 2021 Jan)

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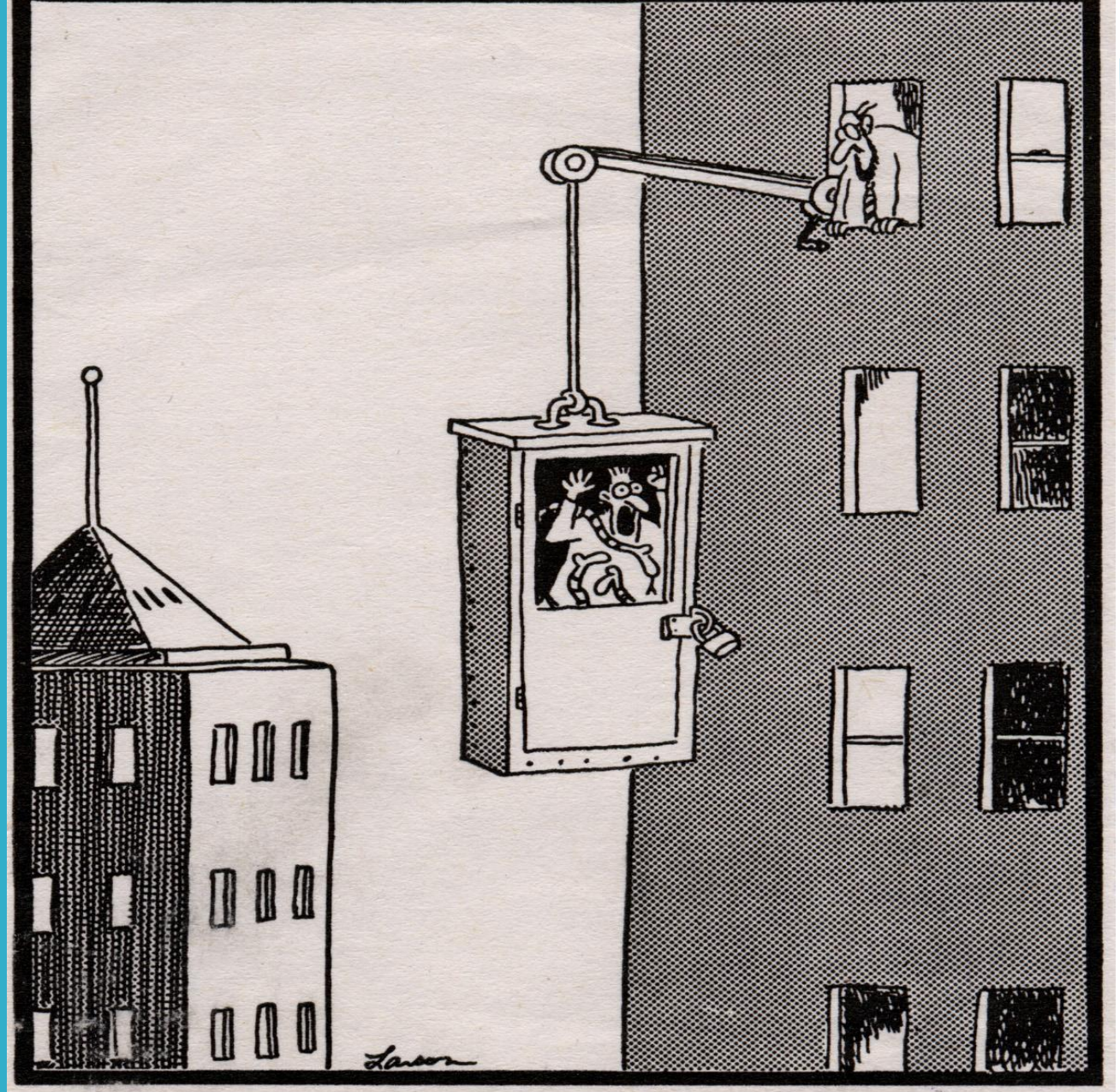
- ***Objective:*** The outcome of pediatric obsessive-compulsive disorder (OCD) is still unclear. In the present study, long-term rates and predictors of remission were used to identify potential factors influencing the outcome of pediatric OCD.
- ***Methods:*** Using meta-analysis techniques, we calculated the pooled rate of remission and performed subgroup analyses to identify potential heterogeneities, and the meta-regression analysis was used as a predictor.
- ***Results:*** A total of 18 studies including 1389 participants were identified, and the follow-up periods ranged from 1 to 16 years.
- The **pooled remission rate of pediatric OCD was 62% (**95% confidence interval: 52–72). **Shorter duration of OCD at baseline ($R^2 = 78.04\%$, $p < 0.0001$) predicted higher rates of remission.**
- ***Conclusions:*** The outcome of pediatric OCD seems to be better than the past. Shorter duration of illness appears to be related to a better outcome.
- **Early detection of pediatric OCD and early intervention** play an important role in good prognosis. In the future, studies based on multicenter, longer follow-up studies with larger samples were needed to confirm these issues for the outcome of pediatric OCD.



Professor Gallagher and his controversial technique of simultaneously confronting the fear of heights, snakes, and the dark

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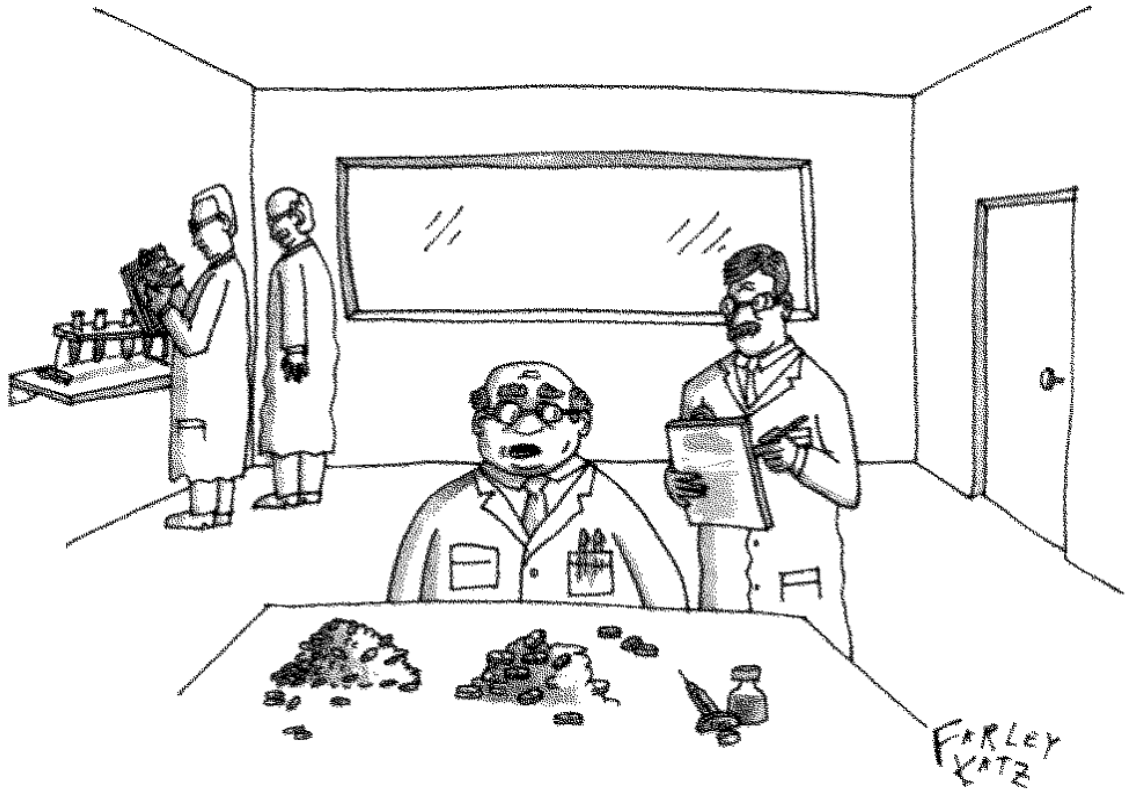
Overview of Treatment: Pediatric OCD
First Line: Cognitive Behavioral Therapy

Key process: Psycho-education
Map and Externalize OCD
"Bossing" Back
Exposure and response prevention

Key mechanism of action: *Exposure to anxiety provoking thought leads to urge to ritualize>>>>>compulsion.
If response is prevented, anxiety is not relieved, habituation will occur, and obsession will diminish.

AACAP recommends CBT as first line treatment for mild-moderate pediatric OCD

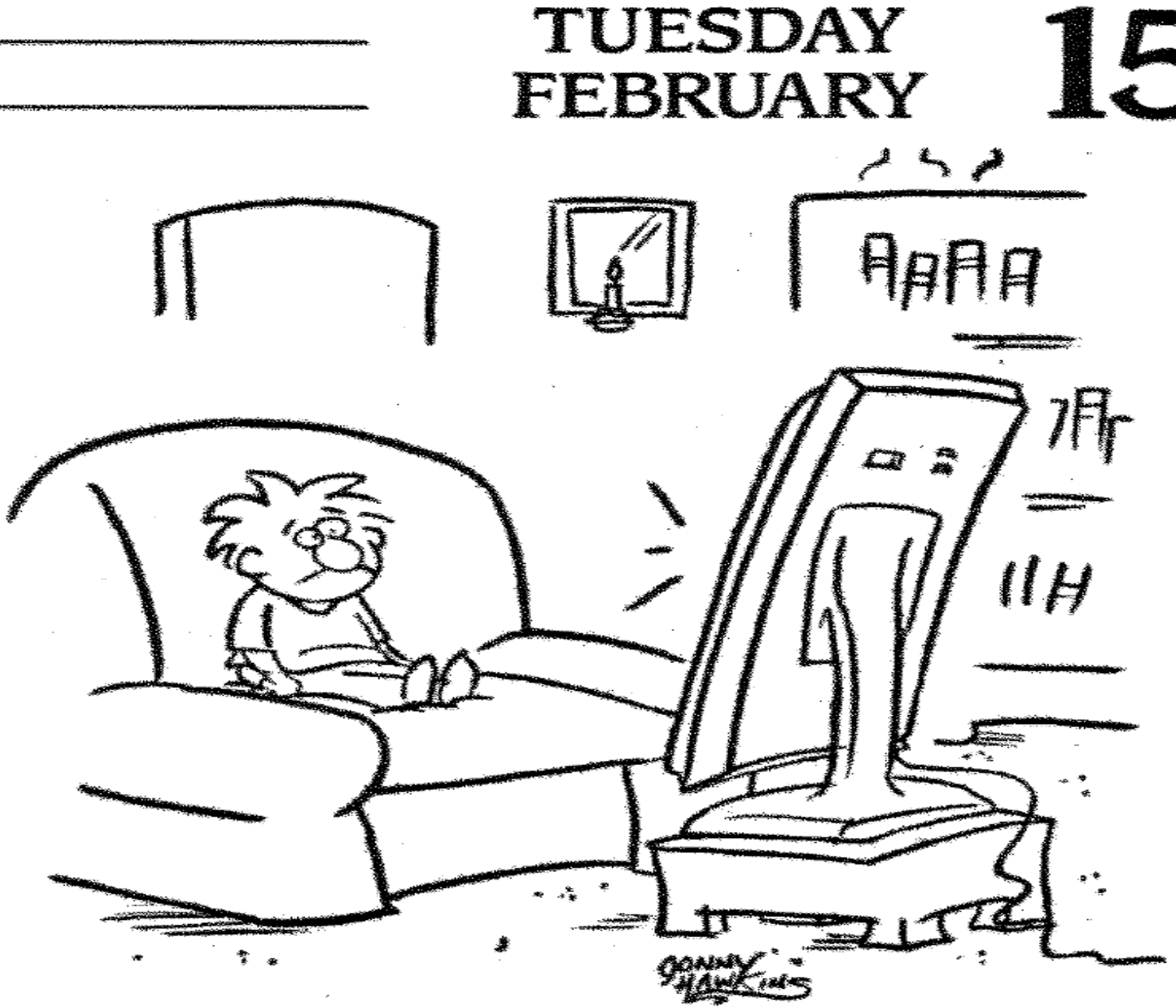
INSIDE THE FDA



"These medicines all taste pretty good—let's approve them."

Easter Saturday (Australia—except TAS, WA)/
/Easter (Western, Orthodox)

SAT/SUN
APRIL 3/4



"Ask your mother if this medicine is right for you."

Pediatric OCD Treatment Study (POTS): CBT, Sertraline and Combination for Children and Adolescents with OCD

(Pediatric OCD Treatment Study Group; JAMA, 2004; 292; 16; 1969-1976)

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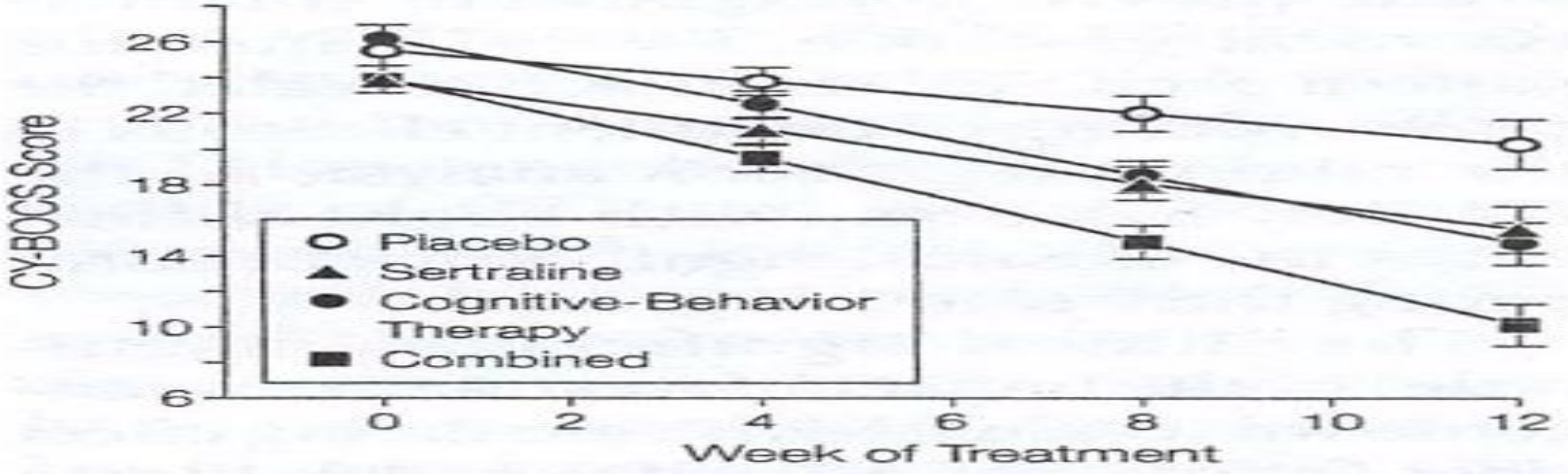
- **Design:** Randomized controlled trial in 3 US centers
- **Methods**: Duration: 12 wk.; ages 7-17
- N=112 randomized; 97 completers
- **Results:** Each treatment alone SER (p <0.007); CBT (p <0.003), COM (p <0.001) was more effective than placebo.
- **Effect sizes**: COM 1.4; CBT 0.97; SER 0.67
- **Conclusion: Combined treatment was superior to both SER alone (p<0.006) and CBT (p<0.008) alone.**
- **Adverse Effects**: Generally well tolerated.

Weekly Adjusted Intent-to-Treat CY-BOCS Score, by Treatment Group



Range of possible scores for the Children's Yale-Brown Obsessive-Complusive Scale (CY-BOCS) is 0-40. Error bars indicate SE. Mean (SE) scores adjusted for fixed effects for treatment, site, days since baseline (linear time trend), and all 2- and 3-way interactions.

Predictors and Moderators of Treatment Outcome in Pediatric OCD Treatment Study (POTS I)

(Garcia, A. Sapyta, M et al. JAACAP; 2010; 49 (10); 1024-1033)

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Objective: Identify predictors and moderators of outcome in POTS I study.

Predictor: *Baseline factor with main effect on outcome, regardless of treatment condition.*

Moderator: *Baseline factor that interacts with treatment condition on outcome*

Method: Outcome measure: adjusted week 12 predicted CY-BOCS score.

Main and interactive effects of treatment condition and each candidate predictor/moderator were examined using general linear model on predicted week 12 score.

Results: Predictors of Greater Improvement: Lower OCD severity, less functional impairment, greater insight, fewer comorbid externalizing symptoms and lower family accommodations.

Moderator of Reduced Improvement: Family OCD history was associated with 6-fold decrease in effect size in CBT monotherapy.

Conclusion: More complex youth need optimized treatment strategies.

Treatment of Pediatric Anxiety Disorders: Serotonin Reuptake Inhibitors:

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FDA Approvals

- Clomipramine - FDA approved > age 10 OCD
- Fluvoxamine - FDA approved > age 8 OCD
- Sertraline - FDA approved > age 6 OCD
- Escitalopram – FDA approved > age 12 for depression
- Fluoxetine – effective for OCD; FDA approved MDD > age 7
- Paroxetine – effective for OCD and Social Phobia
- Citalopram – No controlled trials in children

Medications used in the Treatment of OCD: Empirical Support and Dosing Guidelines

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	Empirical Support			
Medication	Child	Adult	Starting Dose (mg)	Usual Dose Range (mg/day)
Clomipramine	A	A	25-50	100-250
Fluoxetine	A	A	5-20	10-60
Sertraline	A	A	25-50	50-250
Fluvoxamine	A	A	25-50	50-350
Paroxetine	B	A	5-10	10-60
Citalopram	B	A	5-10	20-60
Escitalopram*	B	A	5-10	10-20

* Not well studied in OCD, presumed to be similar in efficacy to citalopram.

Scahill et al. 2006

Pediatric OCD Treatment: General Guidelines

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- *AACAP Practice Parameters recommends* **CBT treatment as first line intervention in mild-moderate OCD**
- **Uncomplicated OCD:**
- Adequate trial of at least 2 SSRI/SRI agents sequentially.
- *Duration: 8-10 weeks in juveniles at therapeutic dose.
- Maintenance: 6-12 months after response
- **Complicated OCD:**
- **Treatment of all comorbid disorders is necessary, prioritizing symptoms/disorders**

  OCD + Tics *(March et al. Biol Psych 2007; 61; 344-347)*

  In POTS I, 15% had tics (TD or CMT).

  Tics moderated response to SER (no different than PBO) but not to CBT or COM. Recommend **CBT or COMB** for OCD+tics**.**

Pediatric OCD Pharmacotherapy: Duration of Treatment

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- Optimal duration: **at least 10-12 weeks**
- Probably reasonable to begin with fluoxetine or sertraline
- Relapses are common when medication is discontinued
- Probably reasonable to **maintain for 9-12 months** after treatment response
- Medication should be gradually tapered
- Adverse effects: gastrointestinal, activation, apathy (abulia)

IOCDF Accreditation Task Force
Competency Standard (Coffey, B. Bloch, M.)
What are the criteria for initiation of treatment with a selective serotonin reuptake inhibitor in a child with OCD?

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*1. Establish that the child/adolescent has **OCD and that this is the most impairing diagnosis** requiring treatment.*

*2. Establish whether the child **has received, or had access to, evidence-based CBT** including exposure and response prevention (ERP).*

*3. Establish that if there has not been timely access to CBT or if the access has not been with a specialist, **consider initiation of pharmacotherapy as the next step**.*

*4. Discuss informed consent about the **risk/benefits of SSRI pharmacotherapy** in pediatric OCD. Be able to explain …*

- *a. **Efficacy of SSRIs in pediatric OCD***
- *b. **Adverse effects** associated with SSRI pharmacotherapy in children **
- *c. Expectancy of **time-course of response and adverse effects** of SSRIs in pediatric OCD*

***** ***unique adverse effects that need to be discussed in children when prescribing SSRIs are risk of suicidal ideation and activation syndrome.***

Unique Considerations in Pharmacotherapy of OCD *in Children and Adolescents*
IOCDF Accreditation Task Force (Coffey, B. Bloch, M.)

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- **Differential Diagnosis – Distinguishing OCD from …**
  - Normal Development
  - Complex Tics of Tourette Syndrome
  - Repetitive and Restricted Behaviors of Autism Spectrum Disorders
- **Pharmacological Treatment**
  - Unique adverse effects in pediatric population: **suicidal ideation/behavior and activation syndrome**
  - **Choice of SSRI**:, **no evidence of difference in efficacy across the class** so treatment decisions are often made based on adverse effect profiles. Short half-life SSRIs (paroxetine, fluvoxamine) are less utilized in pediatric populations.
  - Only **several agents are formally FDA approved** for pediatric use in OCD
  - No fixed dose trials of SSRIs for OCD (or depression/anxiety) in children; **we don't have the evidence base for dose-response data for OCD as there is in adults**.
  - **Administration issues**: Trouble swallowing pills and use of liquid formulations

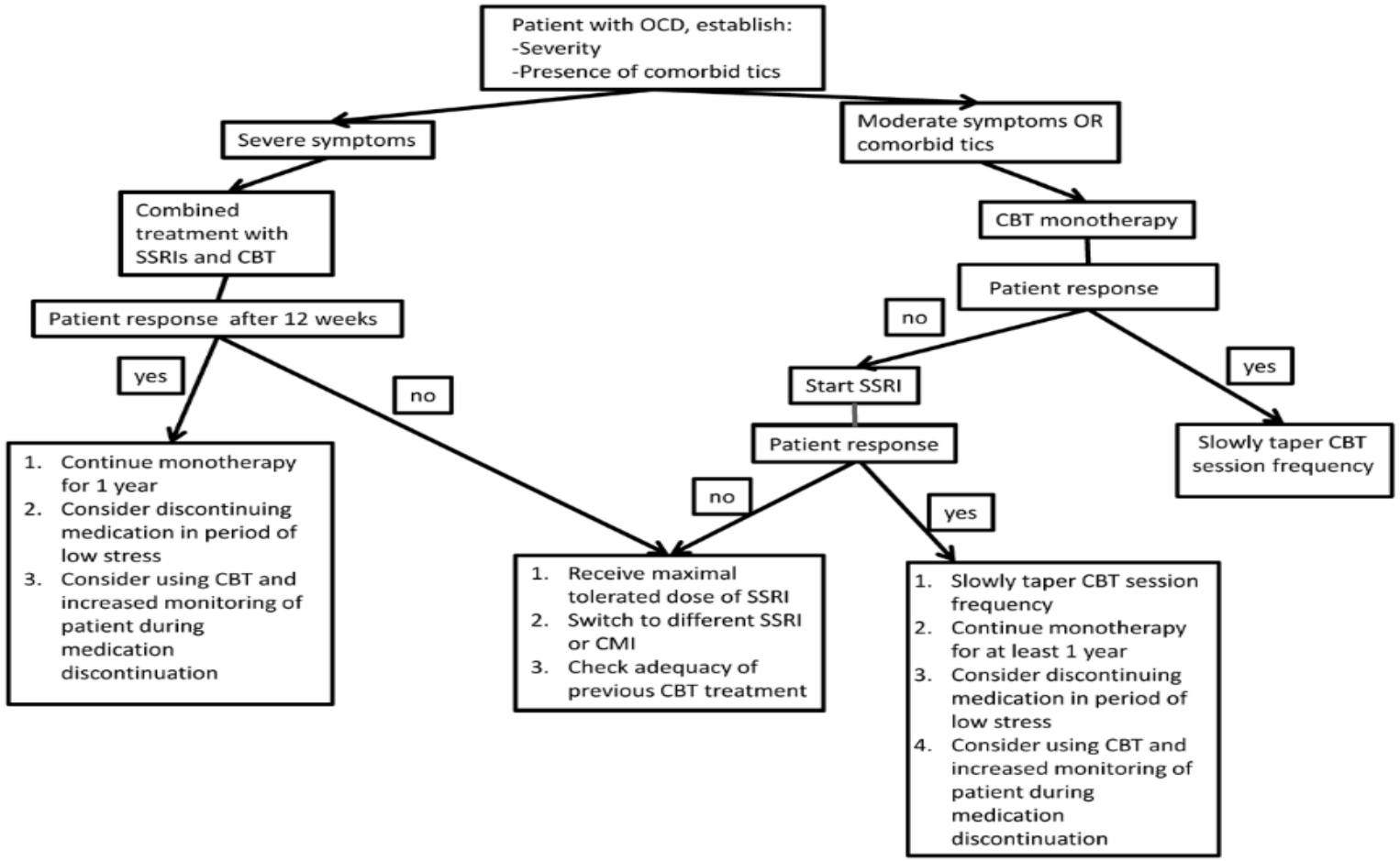

Figure 1.
Algorithm for the management of pediatric obsessive-compulsive disorder (OCD).
Note: CBT = cognitive-behavioral therapy; CMI = clomipramine; SSRI = selective serotonin reuptake inhibitors.

Bloch, M. Treatment-Refractory OCD in Children. 2015.

Future Trends? Glutamatergic Agents

An Open-Label Trial of Riluzole, a Glutamate Antagonist, in Children with Treatment-Resistant Obsessive-Compulsive Disorder
(Grant, P. Lougee L., Hirschtritt, M., Swedo, S. JCAP; 2007; 17 (6); 761-767)

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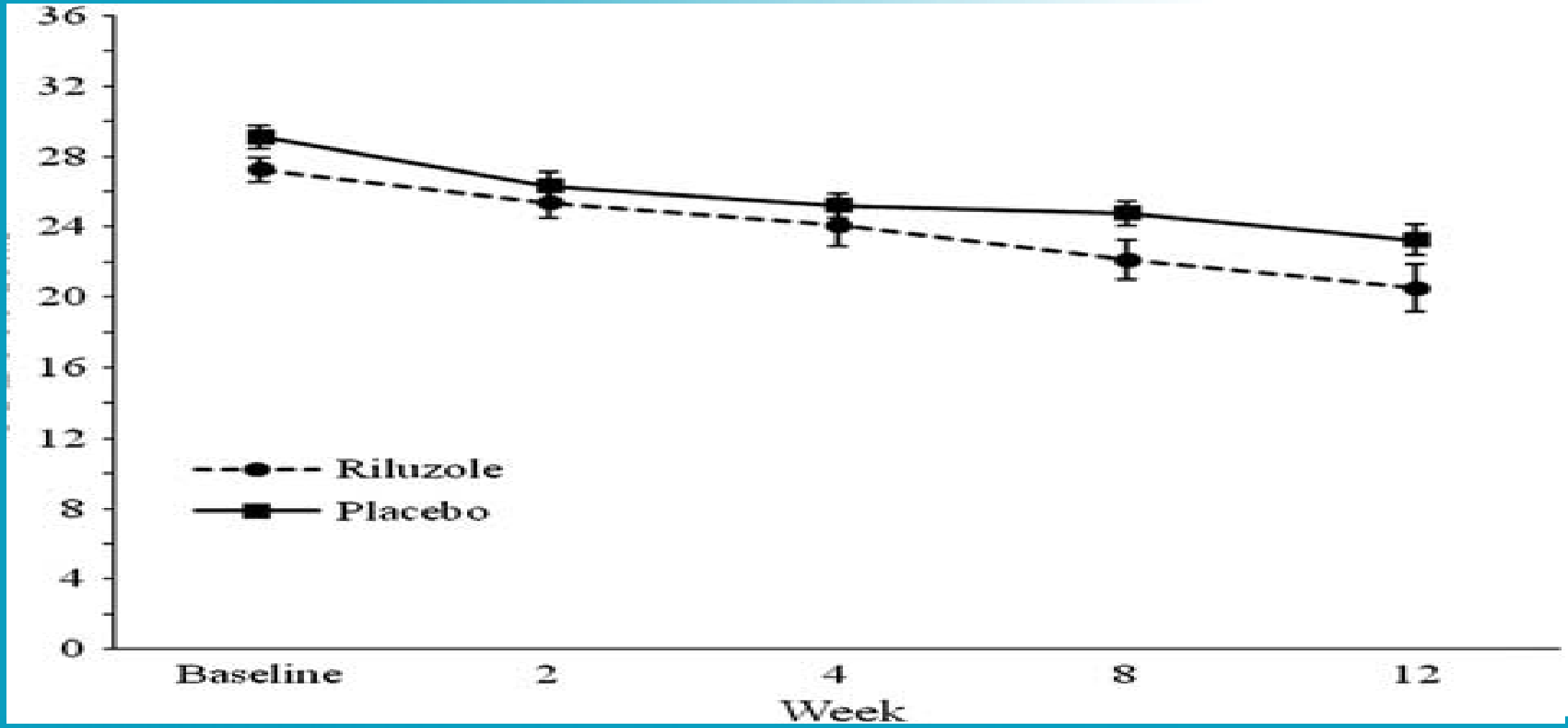
- **Methods:** N=6 subjects, ages 8–16 years in 12-week open-label trial of riluzole for treatment resistant OCD symptoms.
- **Results:** Four of 6 subjects had clear benefit, reduction of > 46% (39% overall) on CY-BOCS, and CGI 1 or 2. Two subjects had no clinically meaningful change in symptom severity by 12 weeks, but 1 subject improved thereafter.
- **Adverse Effects**: There were no adverse effects of drug which led to discontinuation or dose reduction. All subjects elected to continue riluzole after the 12-week trial.
- **Conclusions**: Riluzole may be beneficial for treatment-resistant OCD in young subjects and seems well tolerated. A placebo-controlled trial of the drug is underway.

12-Week, Placebo-Controlled Trial of Add-on Riluzole in the Treatment of Childhood-Onset Obsessive–Compulsive Disorder

(*Grant, P. et al Neuropsychopharmacology (2014) 39, 1453–1459)*



N-Acetylcysteine for Pediatric Obsessive-Compulsive Disorder: A Small Pilot Study

Fenghua L. Welling, M et al. JCAP; Volume 30 1, 2020
Pp. 32–37DOI: 10.1089/cap.2019.0041

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- **Background:** N-acetylcysteine (NAC), a glutamate modulating drug, has shown to be a promising agent in adults with OCD.
- **Methods:** Double-blind, placebo-controlled clinical trial from July 2012 to January 2017. Children ages 8 to 17 years with OCD received NAC (up to 2700 mg/day) or matching placebo for a period of 12 weeks.
- Children were required to be on stable psychiatric treatment (both medication and therapy) but were not required to be treatment-refractory.
- Primary outcome was OCD symptom severity on CY-BOCS.
- **Results**: Due to poor recruitment and eventual expiration of study medication, enrollment was stopped at 11 children from a planned sample size of 40.
- NAC associated with significant reduction in CY-BOCS total score vs. placebo ($p = 0.024$) with effects separating from placebo beginning at week 8.
- Mean CY-BOCS total score decreased in the NAC group from 21.4 – 4.65 at baseline to 14.4 – 5.55 at week 12. In the placebo group, mean CY-BOCS total score remained unchanged (21.3 – 4.65).
- In the NAC group, 1/5 participants achieved >35% improvement in CY-BOCS total score, while none of the six patients in placebo group reached this improvement level.
- NAC and placebo were well tolerated. One mild adverse event was reported in each group.
- **Conclusions:** There may be some initial improvement in OCD symptom severity with NAC treatment. NAC was well tolerated in the study sample. Future trials should employ multiple sites and have a larger study population

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Summary: OCD in Children and Adolescents

- OCD is a **complex, heterogeneous disorder**. There are important differences in **pediatric onset OCD** and adult-onset OCD.
- Young children typically **do not have insight** as to the unrealistic nature of their obsessions.
- **Orbitofrontal cortex, thalamus and caudate nucleus** are major regions that are implicated in OCD in neuroimaging studies. To date there is mixed but inconclusive evidence for significant dysfunction in serotonin, dopamine and/or glutamate or specific genes.
- **OCD symptoms may be missed** by parents and pediatricians, but the disorder may be impairing.
- **Systematic screening** is recommended in all child and adolescent psychiatric patients.
- Evaluation and treatment of common psychiatric comorbid disorders is essential, i.e depression, tic disorders, ADHD.
- **AACAP guidelines** recommend starting with CBT for treatment of pediatric OCD disorders, followed by SSRI.
- Pharmacotherapy recommendations include at **least two SSRIs, then clomipramine. There are no fixed dosed studies exploring dosing in pediatric OCD.**
- “Treatment resistance” may be associated with **inadequate exposure and response prevention.**