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GENERAL HOSPITAL

PSYCHIATRY ACADEMY

Emotional Dysregulation and Mania

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Disclosures

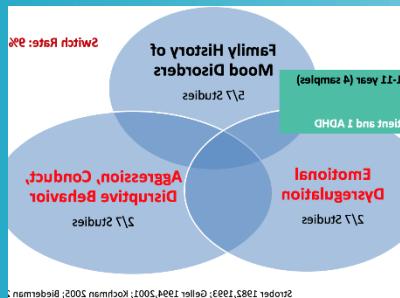
My spouse/partner and I have the following relevant financial relationships with commercial interests to disclose:

Dr. Janet Wozniak receives research support from the Baszucki Brain Research Fund, PCORI and Demarest Lloyd, Jr. Foundation. In the past, Dr. Wozniak has received research support, consultation fees or speaker's fees from Eli Lilly, Janssen, Johnson and Johnson, McNeil, Merck/Schering-Plough, the National Institute of Mental Health (NIMH) of the National Institutes of Health (NIH), Pfizer, and Shire. She is the author of the book, *"Is Your Child Bipolar"* published May 2008, Bantam Books.

Her spouse receives royalties from UpToDate; consultation fees from Emalex, Noctrix, Disc Medicine, Avadel, HALEO, OrbiMed, and CVS; and research support from Merck, NeuroMetrix, American Regent, NIH, NIMH, the RLS Foundation, and the Baszucki Brain Research Fund. In the past, he has received honoraria, royalties, research support, consultation fees or speaker's fees from: Otsuka, Cambridge University Press, Advance Medical, Arbor Pharmaceuticals, Axon Labs, Boehringer-Ingelheim, Cantor Colburn, Covance, Cephalon, Eli Lilly, FlexPharma, GlaxoSmithKline, Impax, Jazz Pharmaceuticals, King, Luitpold, Novartis, Neurogen, Novadel Pharma, Pfizer, Sanofi-Aventis, Sepracor, Sunovion, Takeda, UCB (Schwarz) Pharma, Wyeth, Xenopore, Zeo.

Overview:
Emotional dysregulation can be considered as a separate entity from mood disorders

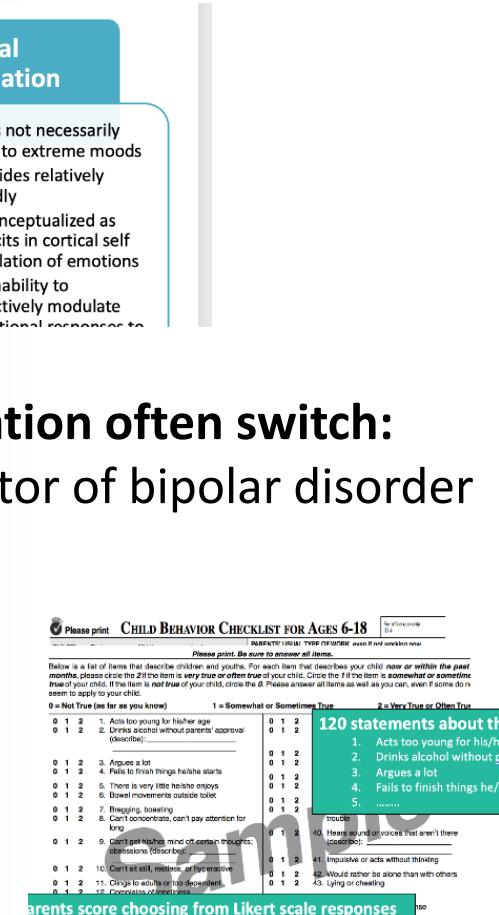
Emotional dysregulation is conceptualized as deficits in cortical self regulation of emotions



Children with Emotional Dysregulation often switch:

Emotional dysregulation is a predictor of bipolar disorder

The CBCL can operationalize levels of emotional dysregulation: Deficient Emotional Self-Regulation versus Severe Emotional Dysregulation



Emotional dysregulation can be distinguished from mood disorders



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Mood Disorders

- requires a distinct protracted episode
- predominant depressed, manic or mixed mood
- leads to functional difficulties

Emotional Dysregulation

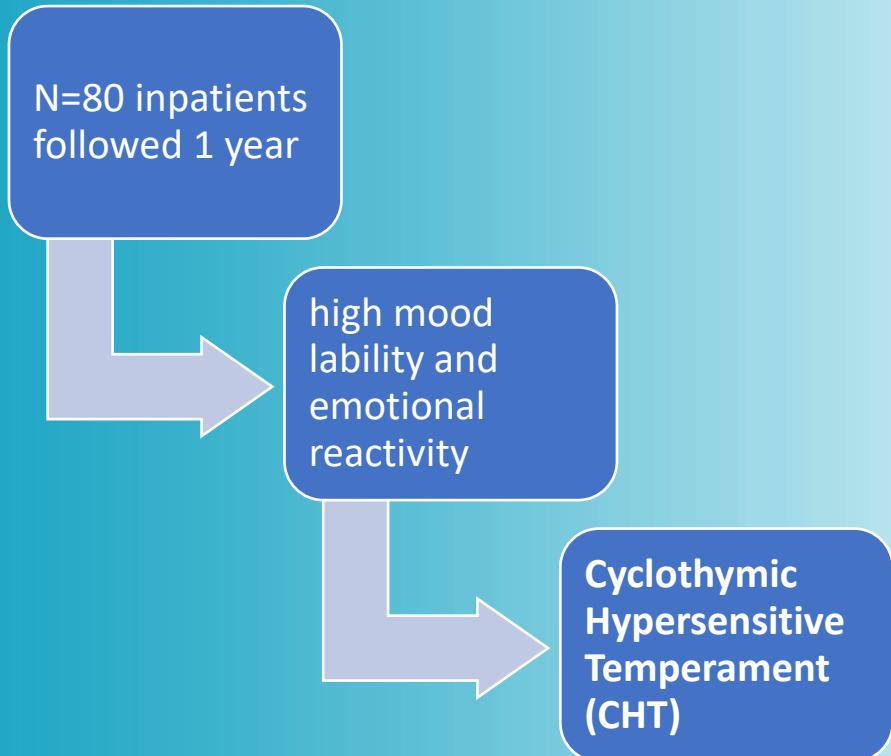
- does not necessarily lead to extreme moods
- subsides relatively rapidly
- is conceptualized as deficits in cortical self regulation of emotions
- an inability to effectively modulate emotional responses to stressors

Emotional dysregulation can be highly impairing



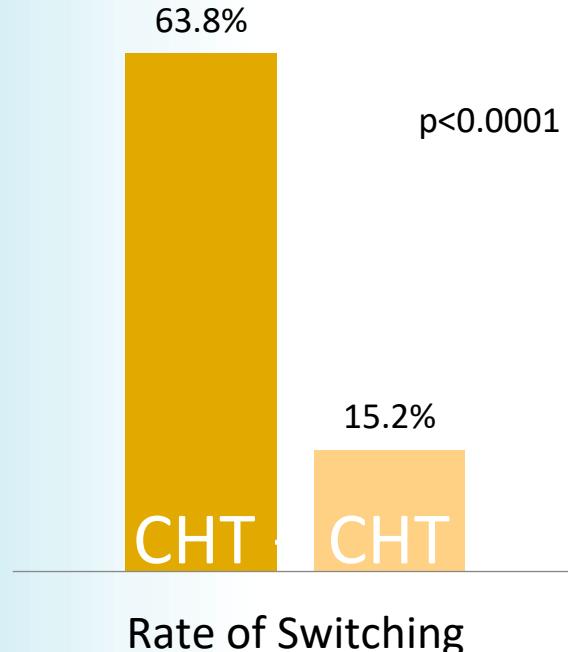
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Children with CHT:

- wider range of aggressive behaviors
- higher rate of suicidality
- switched (64% vs 15%)



Kochman 2005

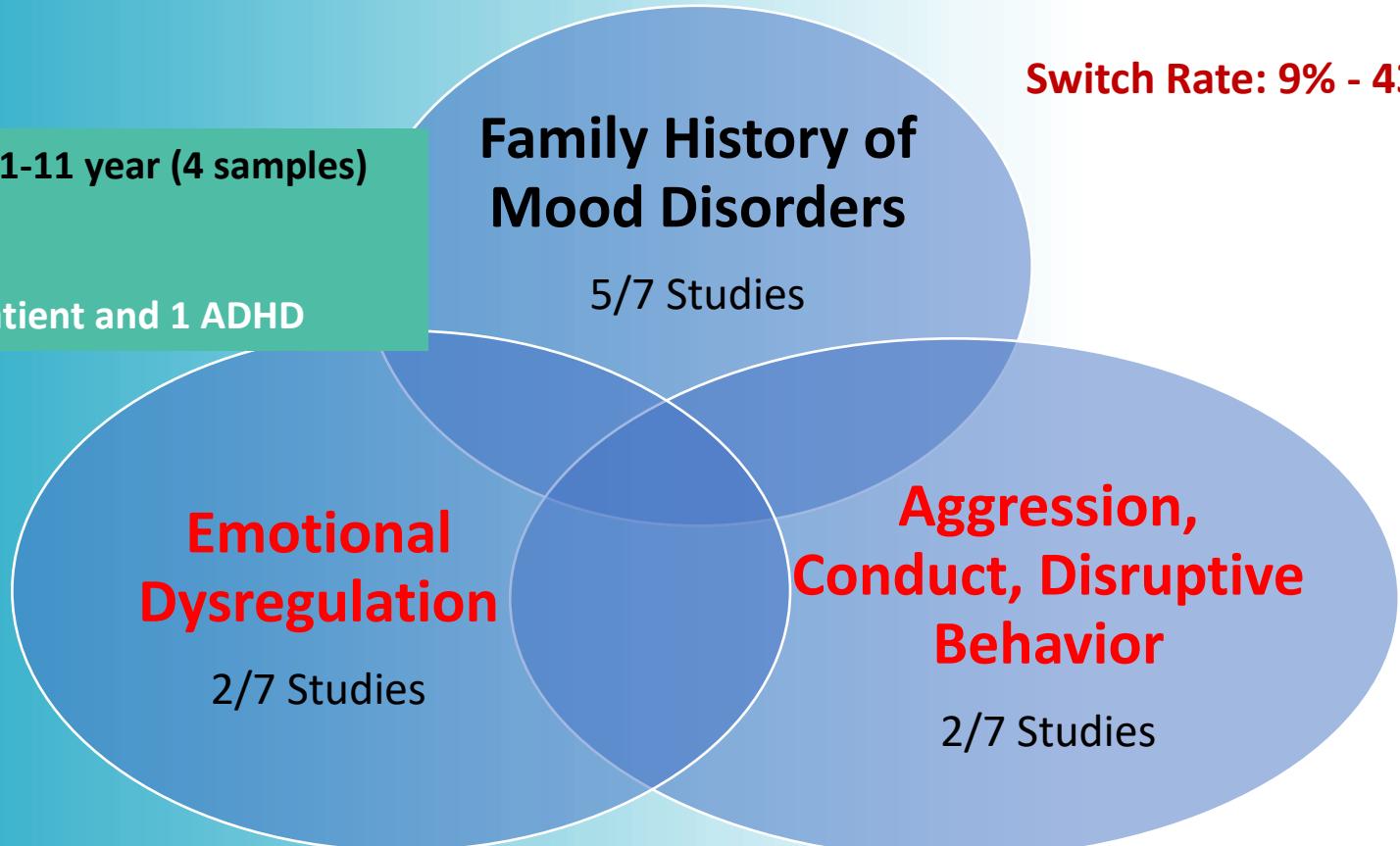
Features of pediatric depression can predict switch to bipolar disorder



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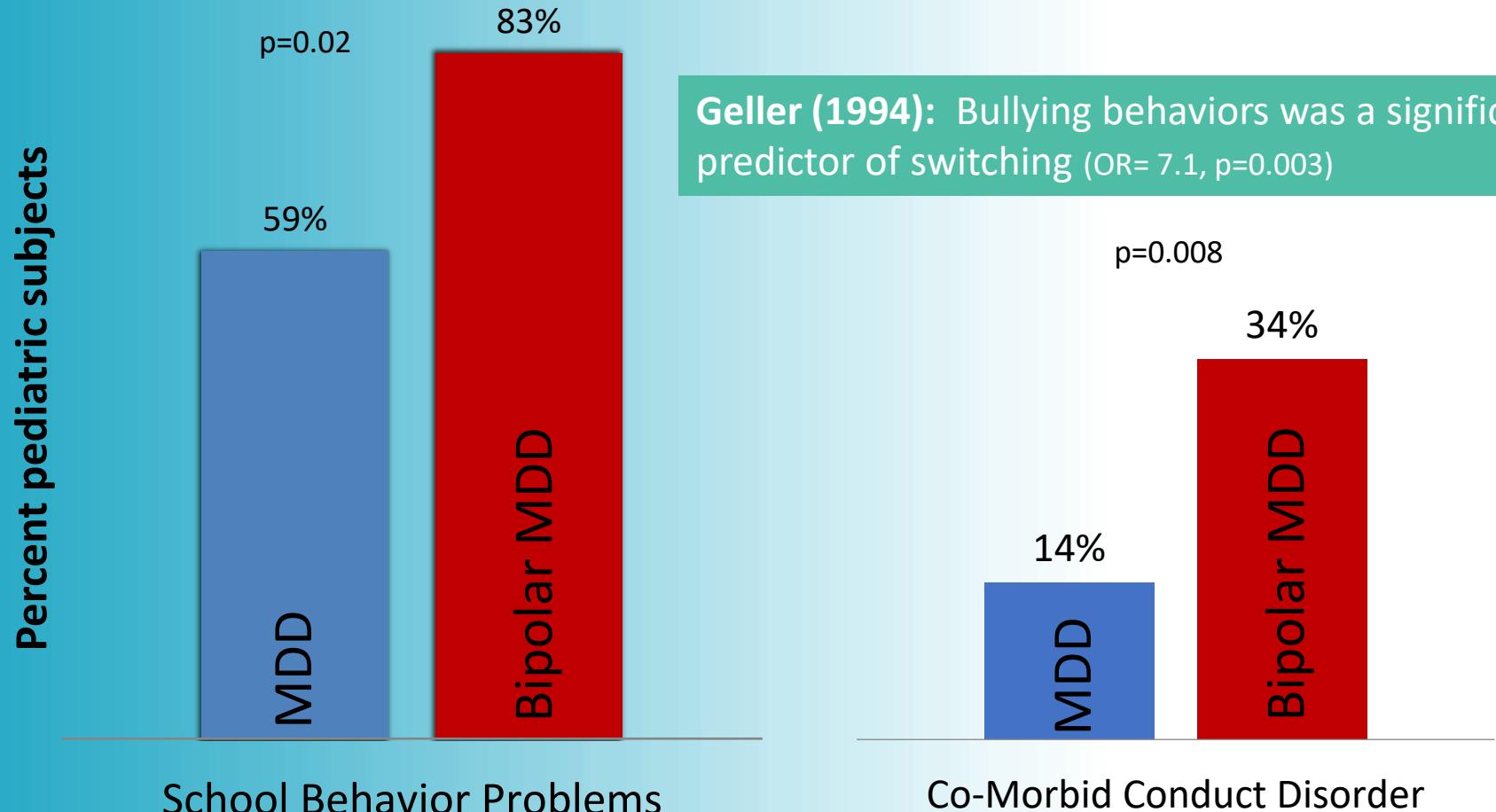
7 follow up studies 1-11 year (4 samples)
N= 985 subjects
ages 6-18 years
2 inpatient, 1 outpatient and 1 ADHD



Strober 1982, 1993; Geller 1994, 2001; Kochman 2005; Biederman 2009, 2013



Aggression, conduct and behavioral problems are associated with Bipolar Depression



Biederman 2009, 2013

The MGH Research Group has published extensively on the utility of the CBCL in *identifying Bipolar Disorder in youth*



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Certain CBCL scores- AAA profile- are associated with a diagnosis of pediatric bipolar disorder

J Affect Disord. 2014 August; 165: 81–86. doi:10.1016/j.jad.2014.04.021.

Further Evidence that Severe Scores in the Aggression/Anxiety-Depression/Attention Subscales of Child Behavior Checklist (Severe Dysregulation Profile) Can Screen for Bipolar Disorder Symptomatology: A Conditional Probability Analysis

Mai Uchida^{a,b}, Stephen V Faraone^c, MaryKate Martelon^a, Tara Kenworthy^a, K Yvonne Woodworth^a, Thomas Spencer^{a,b}, Janet Wozniak^{a,b}, and Joseph Biederman^{a,b,*}

^aClinical and Research Programs in Pediatric Psychopharmacology and ADHD, Massachusetts General Hospital, Boston, MA, USA

^bDepartment of Psychiatry, Harvard Medical School, Boston, MA, USA

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Abstract

Background—Previous work shows that children with high scores (2 SD, combined score \geq 60) on the Hyperactive-Impulsive Behavior, and Anxious-Depressed (A-A-A) subscales

A Familial Risk Analysis of Emotional Dysregulation: A Controlled Study

Journal of Attention Disorders
2018, Vol. 22(9) 848-854
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DOI: 10.1177/108705471559576
jad.sagepub.com
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Joseph Biederman^{1,2}, James Chan¹, Stephen V. Faraone^{3,4},
K. Yvonne Woodworth¹, Thomas J. Spencer^{1,2} and Janet R. Wozniak^{1,2}

Abstract
Objective: Children with deficits in emotional regulation operationalized by scores on the Child Behavior Checklist (CBCL) Attention Problems, Aggressive Behavior, and Anxious-Depressed subscales are more likely than others to manifest adverse outcomes. However, the transmission of this profile has not been well studied. The main aim of this study was to investigate the family of this profile. **Method:** Participants were youth probands with bipolar I (BP-I) disorder ($N = 140$), AD/HD ($N = 140$), and controls ($N = 117$) and their siblings. Based on the CBCL emotional dysregulation profile, we classified children with severe emotional dysregulation (aggression cut-off score ≥ 20) and emotional dysregulation

Genome-Wide Association Study of the Child Behavior Checklist Dysregulation Profile

Eric Mick, S.C.D., James McGough, M.D., Sandra Loo, Ph.D., Alysa E. Doyle, Ph.D.,
Janet Wozniak, M.D., Timothy E. Wilens, M.D., Susan Smalley, Ph.D.,
James McCracken, M.D., Joseph Biederman, M.D., Stephen V. Faraone, Ph.D.

Objective: A potentially useful tool for understanding the distribution and determinants of emotional dysregulation in children is a Child Behavior Checklist profile, comprising the Attention Problems, Anxious/Depressed, and Aggressive Behavior clinical subscales (CBCL-DP). The CBCL-DP index is a heritable trait that increases susceptibility for later psychopathology, including severe mood problems and aggressive behavior. We have conducted a genome-wide association study of the CBCL-DP in children with attention-deficit/hyperactivity disorder (ADHD). **Method:** Families were ascertained at Massachusetts General Hospital and University of California, Los Angeles. Genotyping was conducted with the Illumina HumanM¹ or HumanM² BeadChip platforms. Genome-wide association analyses were conducted with the MQFM multivariate extension of PLINK. **Results:** CBCL data were available for 341 ADHD offspring from 339 ADHDF affected trios from the



The Child Behavior Checklist (CBCL) is a parent completed rating scale that is easy to administer and score

Please print CHILD BEHAVIOR CHECKLIST FOR AGES 6-18

For office use only
ID # _____

CL _____
FL _____
DADENTS' USUAL TYPE OF WORK even if not working now.

Please print. Be sure to answer all items.

N Below is a list of items that describe children and youths. For each item that describes your months, please circle the 2 if the item is **very true or often true** of your child. Circle the 1 if the item is **true** of your child. If the item is **not true** of your child, circle the 0. Please answer all items as well as you can. Some items will seem to apply to your child.

0 = Not True (as far as you know) 1 = Somewhat or Sometimes True

0 1 2	1. Acts too young for his/her age	0 1 2	32. Feels he/she is not good enough
T 0 1 2	2. Drinks alcohol without parents' approval (describe): _____	0 1 2	33. Feels or says he/she is not good enough
M	3. Argues a lot	0 1 2	34. Feels others are not nice to him/her
G 0 1 2	4. Fails to finish things he/she starts	0 1 2	35. Feels worthless
S 0 1 2	5. There is very little he/she enjoys	0 1 2	36. Gets hurt a lot
N 0 1 2	6. Bowel movements outside toilet	0 1 2	37. Gets in many fights
S 0 1 2	7. Bragging, boasting	0 1 2	38. Gets teased a lot
— 0 1 2	8. Can't concentrate, can't pay attention for long	0 1 2	39. Hangs around with others who get in trouble
I. 0 1 2	9. Can't get his/her mind off certain thoughts; obsessions (describe): _____	0 1 2	40. Hears sound or voices that aren't there (describe): _____
to 0 1 2	10. Can't sit still, restless, or hyperactive	0 1 2	41. Impulsive or acts without thinking

0 1 2 20. Destroys his/her own things

0 1 2 21. Wishes he/she were not here

0 1 2 22. Would rather be alone than with others

0 1 2 23. Lying, cheating

0 1 2 24. Fingernails

0 1 2 25. Nervous, highstrung, or tense

0 1 2 26. Nervous movements or twitching (describe): _____

0 1 2 27. Tantrums

0 1 2 28. Bullied by other kids

0 1 2 29. Stopped, didn't move bowels

120 statements about the child's behavior

1. Acts too young for his/her age
2. Drinks alcohol without parents approval
3. Argues a lot
4. Fails to finish things he/she starts
5.

Parents score choosing from Likert scale responses

0=not true

1=somewhat or sometimes true

2=Very true or often true

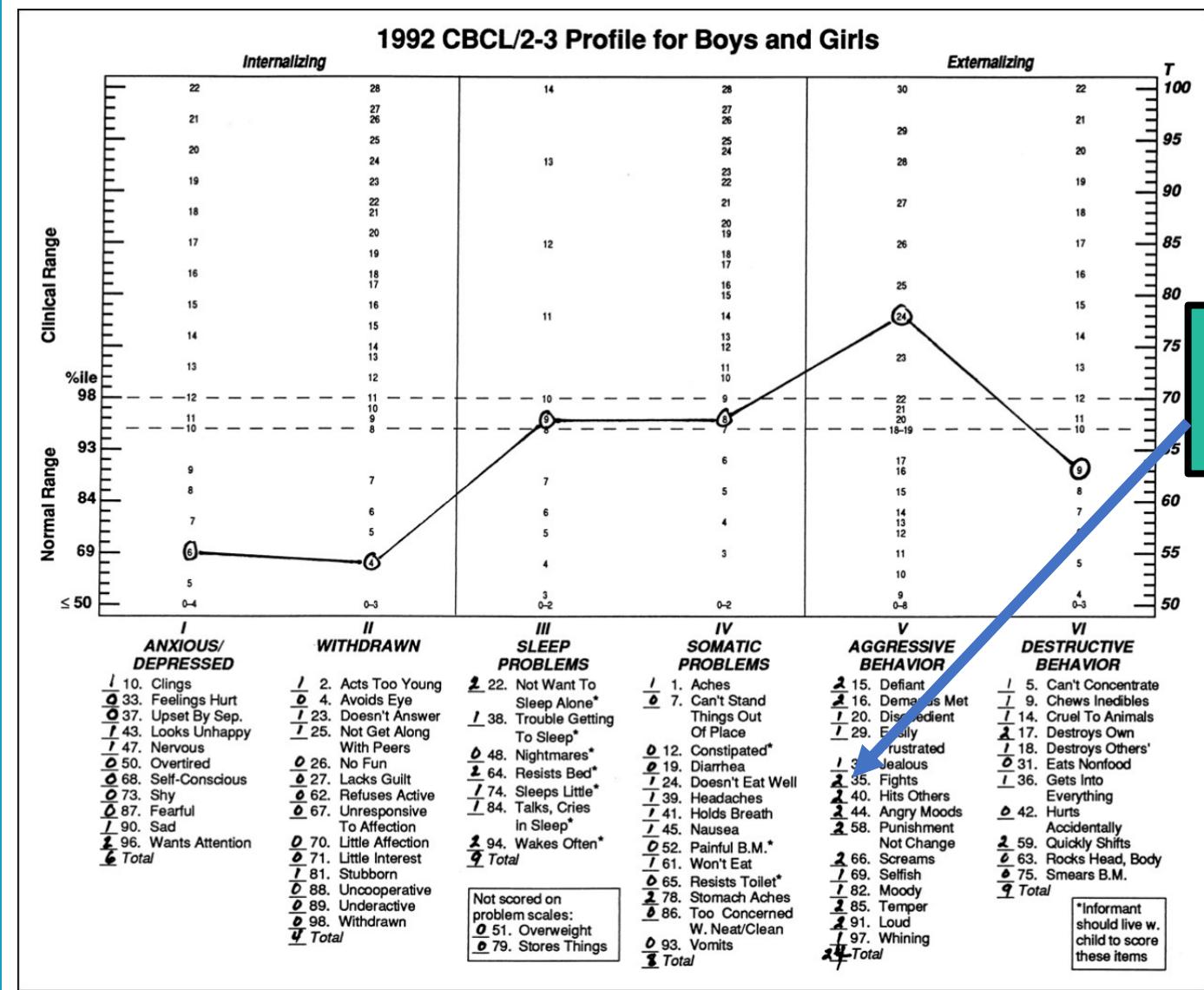
The 120 statements are grouped into 8 subscales or syndrome scales

How to score a CBCL



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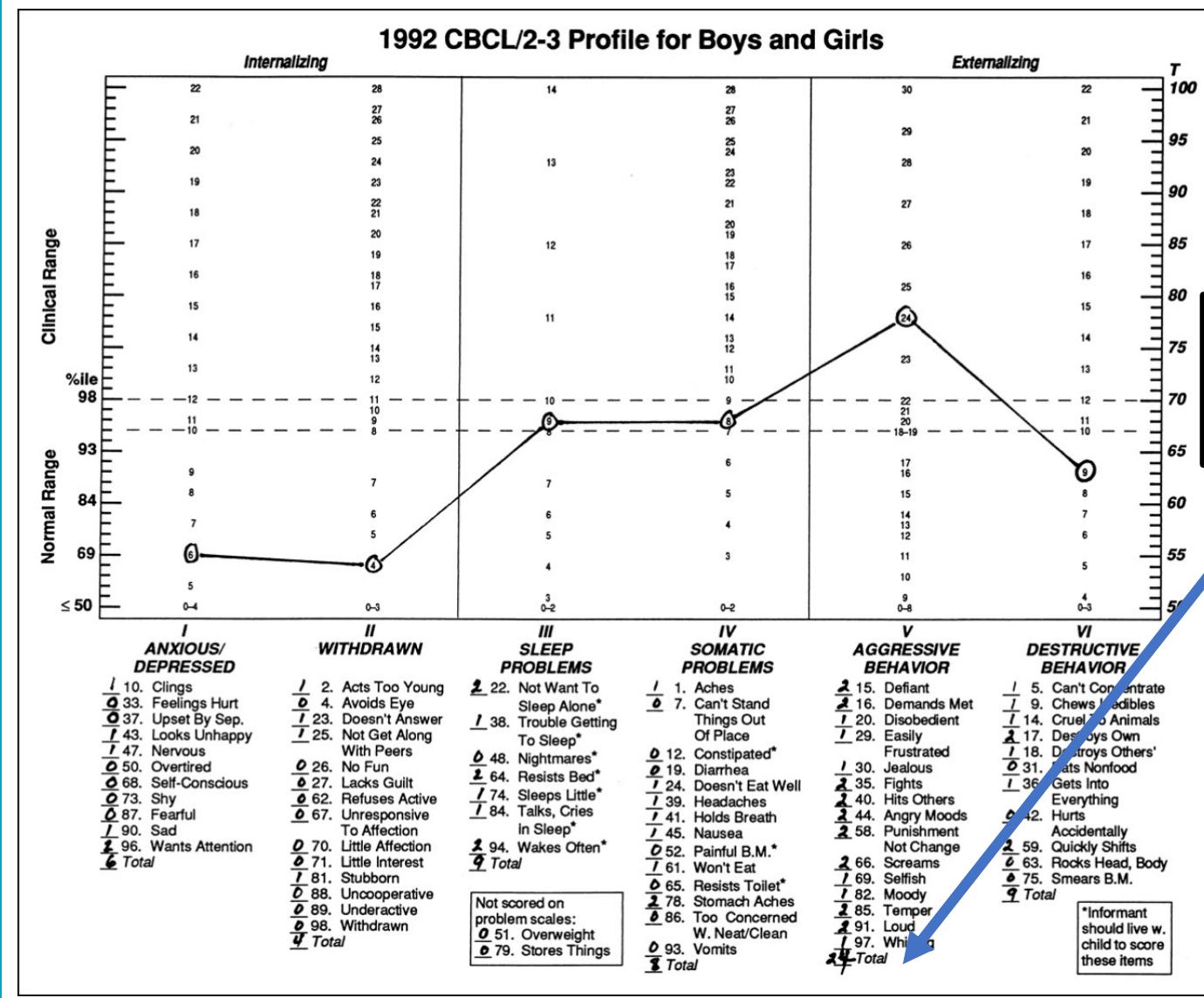
1. Enter all the scores (0, 1, 2) for each of the 120 questions under the different subscale groups

How to score a CBCL



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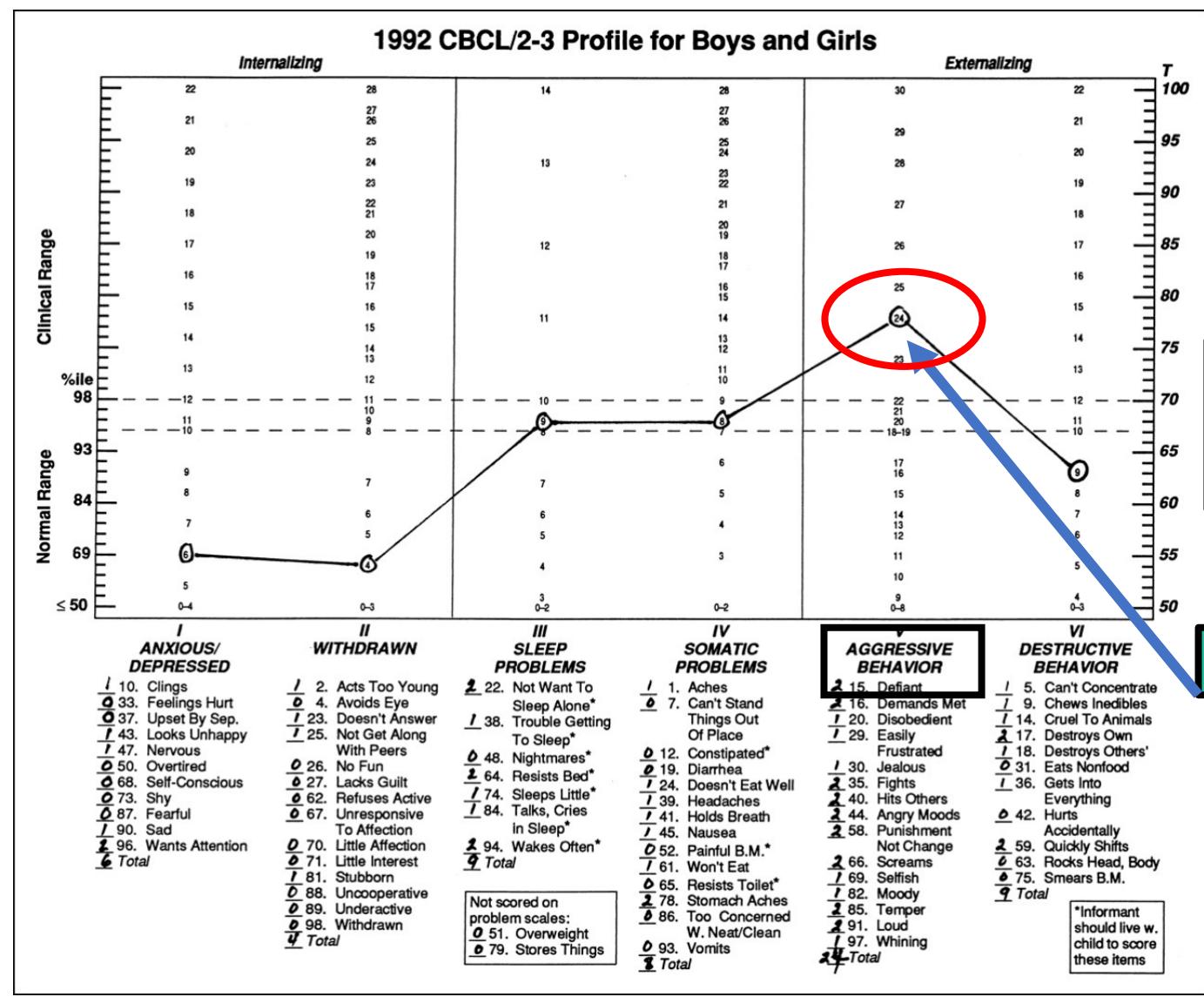


How to score a CBCL



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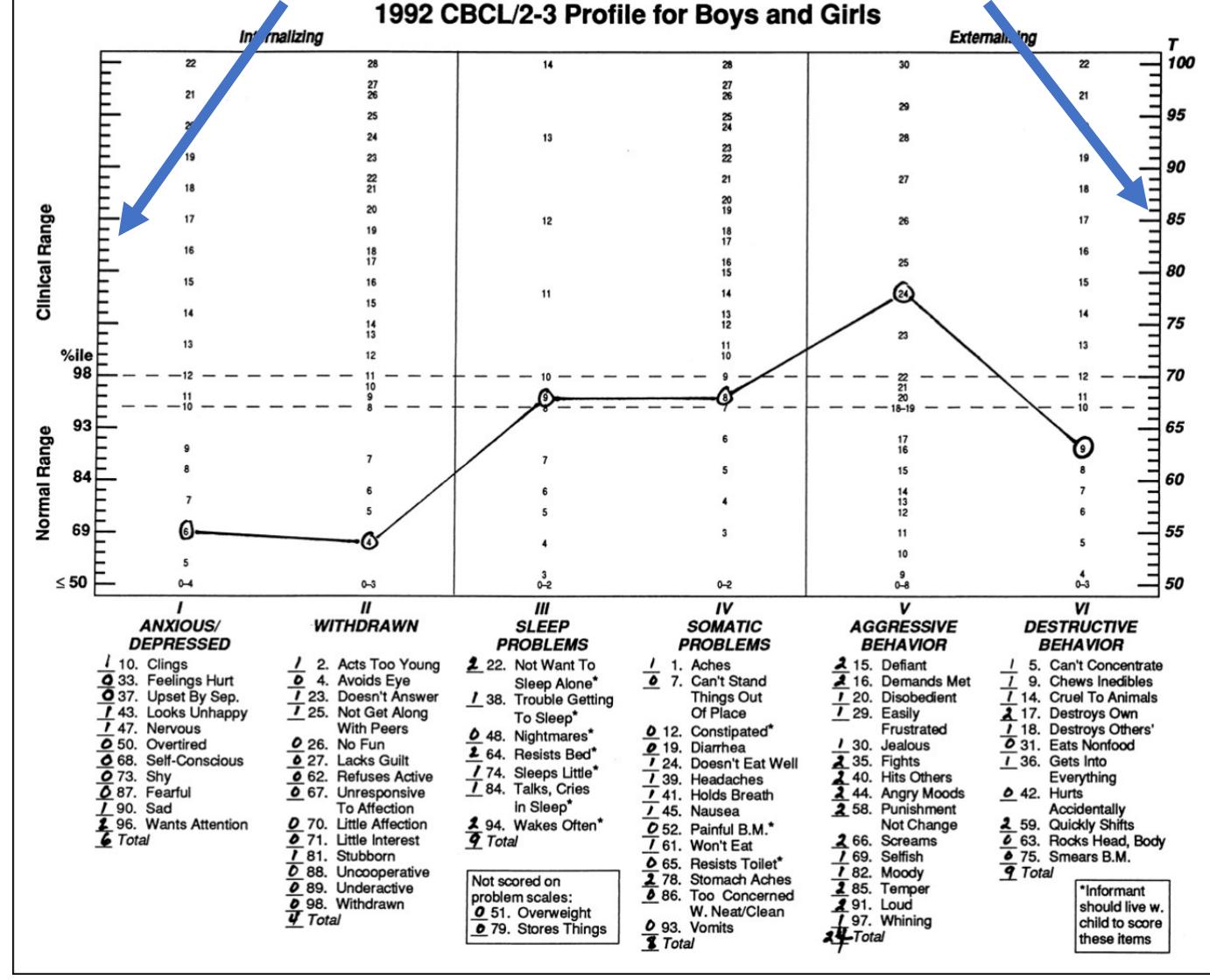
1. Enter all the scores (0, 1, 2) for each of the 120 questions under the different subscale groups

2. Total the score for each subscale

3. Plot the total score on the scale above

Percentile is on the left

T-Score is on the right



1. Enter all the scores (0, 1, 2) for each of the 120 questions under the different subscale groups

2. Total the score for each subscale

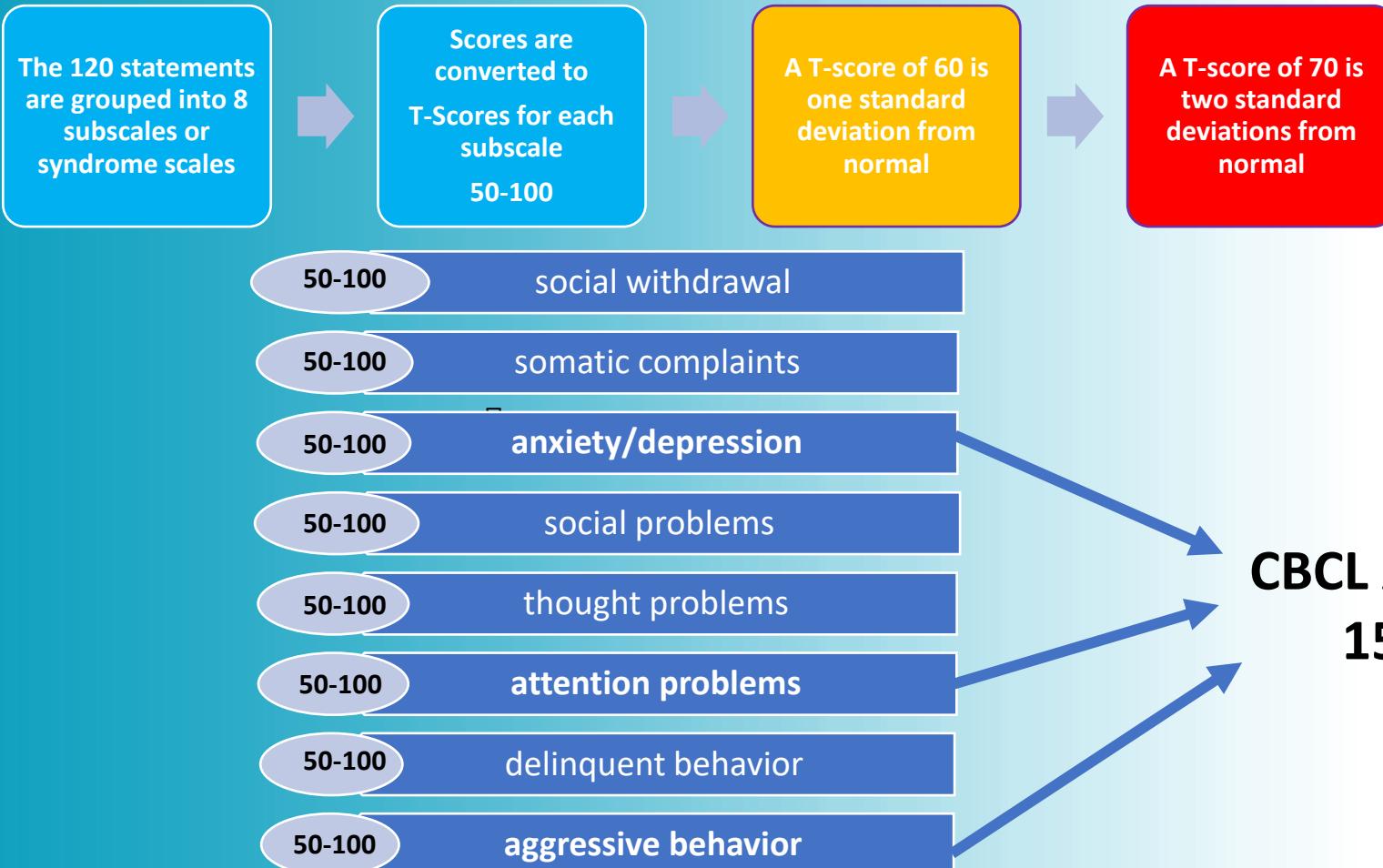
3. Plot the total score on the scale above

The Child Behavior Checklist has 8 clinical subscales



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We operationalized profiles of Emotional Dysregulation based on the composite T-Scores of 3 CBCL subscales

AAA CBCL T-Score range is 150-300

Anxiety/ Depression 50-100

Aggression 50-100

Attention 50-100

A score of 150-180 is considered in the normal to subclinical range

if all 3 scores of the AAA were one SD from normal (60), the total would be 180

if all 3 scores of the AAA were two SD from normal (70), the total would be 210

Emotional Dysregulation (ED) can vary in severity, with DESR being a less severely impairing form and SED, a more severely impairing form



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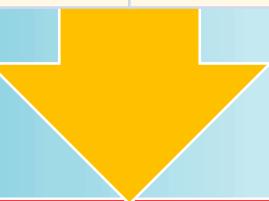
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DESR Deficient Emotional Self Regulation

composite T-score AAA between 1 and 2 SD from normal

greater than 180

less than 210



SED Severe Emotional Dysregulation

composite T-score AAA greater than 2 SDs from normal

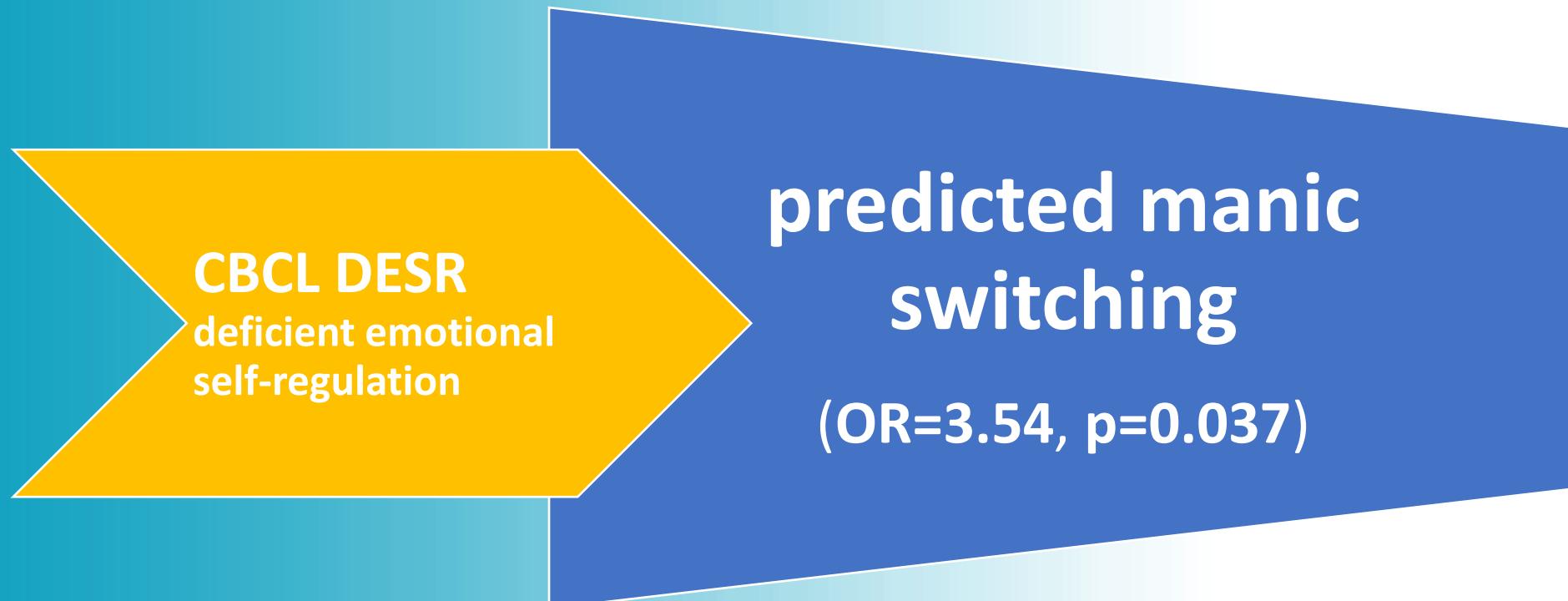
greater than 210

In ADHD youth followed prospectively into adulthood a AAA CBCL score > 180 was associated with switching



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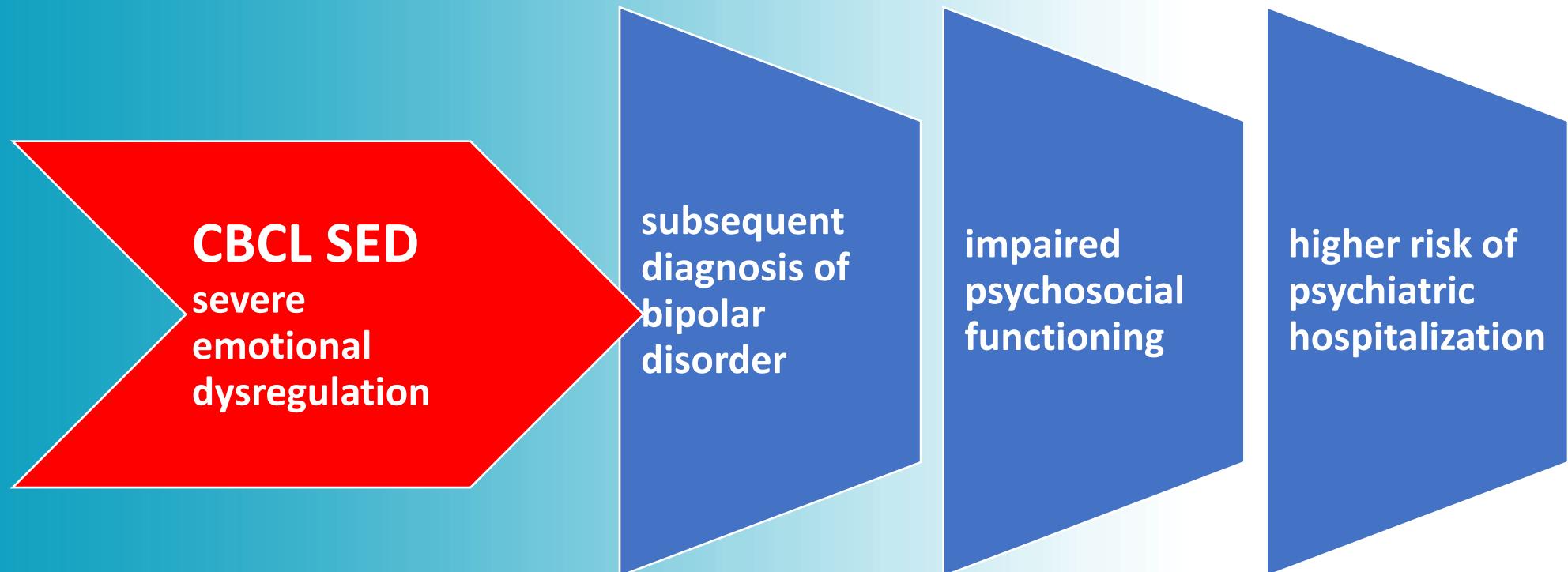
Biederman 2013

In ADHD youth followed prospectively into adulthood a AAA CBCL Score > 210 was associated with bipolar disorder



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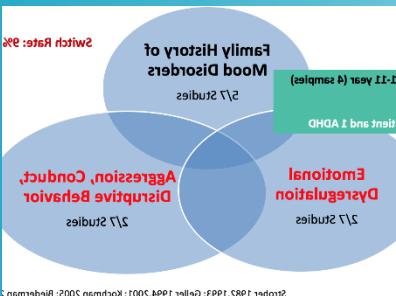


Faroane 2005, Bipolar Disorders
Uchida 2014, Journal of Affective Disorders

Overview:

Emotional dysregulation can be considered as a separate entity from mood disorders

Emotional dysregulation is conceptualized as deficits in cortical self regulation of emotions



Emotional Dysregulation

- does not necessarily lead to extreme moods
- subsides relatively rapidly
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