USC University of Southern California

Developmental-Behavioral Pediatrics (DBP)

Douglas Vanderbilt, MD, MS
CHLA Developmental-Behavioral Pediatrics Division Chief

L.A. Care Children's Health Conference In Collaboration with First 5 LA and Help Me Grow LA, LA County Department of Public Health
March 25, 2023, 9:40 am - 10:40 am PST

CME Disclosures

The following CME planners do not have any financial relationships with ineligible companies in the past 24 months:

- Leilanie Mercurio, L.A. Care PCE Program Manager, CME Planner
- Myishea Peters, MBA, L.A. Care Project Manager, Practice Transformation, CME Planner
- Cathy Mechsner, MBA, PMP, Manager, Practice Transformation Programs, CME Planner
- Ann Isbell, PhD, Program Officer, First 5 LA, CME Planner
- Laura Stein, MPH, Program Specialist, Help Me Grow LA, Division of Maternal, Child, and Adolescent Health, Health Promotion Bureau, Los Angeles County Department of Public Health, CME Planner

The following CME Faculty has financial relationship with an ineligible company, Develo.

- Douglas Vanderbilt, MD, MS, CHLA Developmental-Behavioral Pediatrics Division Chief, CME Faculty
- Develo, a pediatric electronic health record start up company. Dr. Vanderbilt is a consultant.

All relevant financial relationships have been mitigated.

An ineligible company is any entity whose primary business is producing, marketing, selling, re-selling, or distributing healthcare products used by or on patients.

Commercial support was not received for this CME activity.

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Learning Objectives

- Define the Developmental-Behavioral Pediatrics (DBP) perspective and scope of practice understanding the biopsychosocial origins of DBP disorders.
- Specify four (4) screening tools to help diagnose patients with concerns for developmental delay, ADHD and autism.
- Identify two (2) evidence-based therapy and two (2) medication interventions for ADHD and ASD.
- Recognize the role of Adverse Childhood Experiences (ACEs) / trauma exposure/ racism in DBP conditions.

Behavioral Health Epidemic

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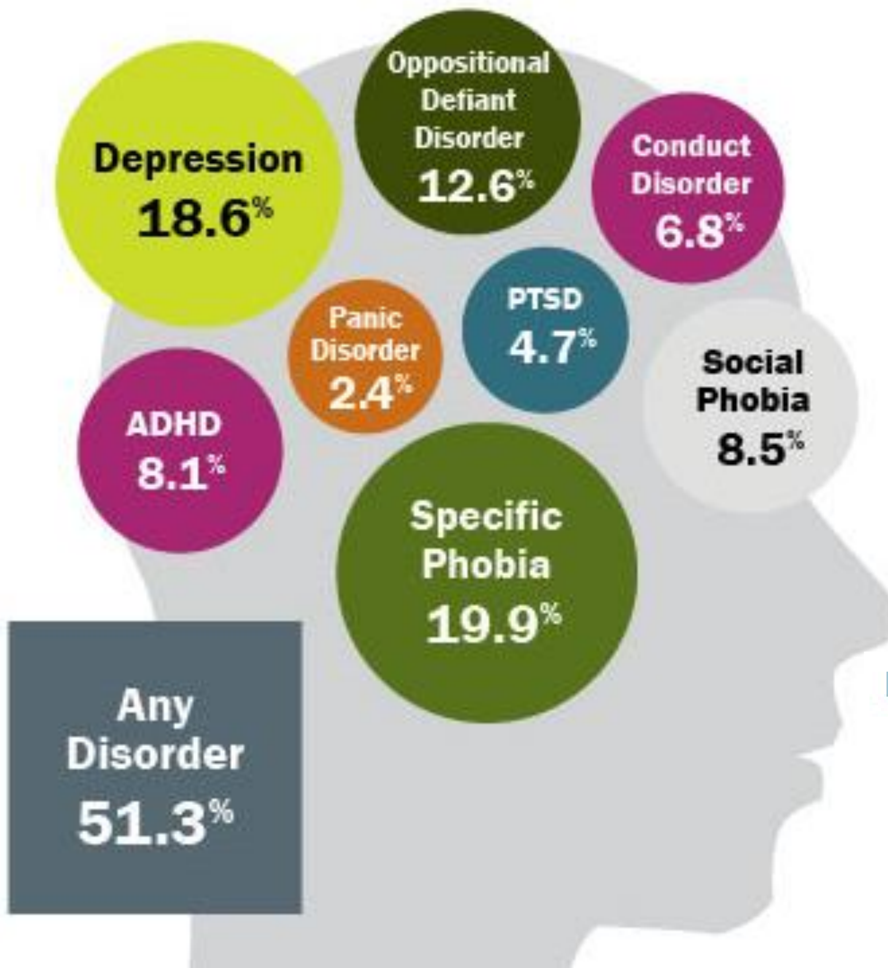
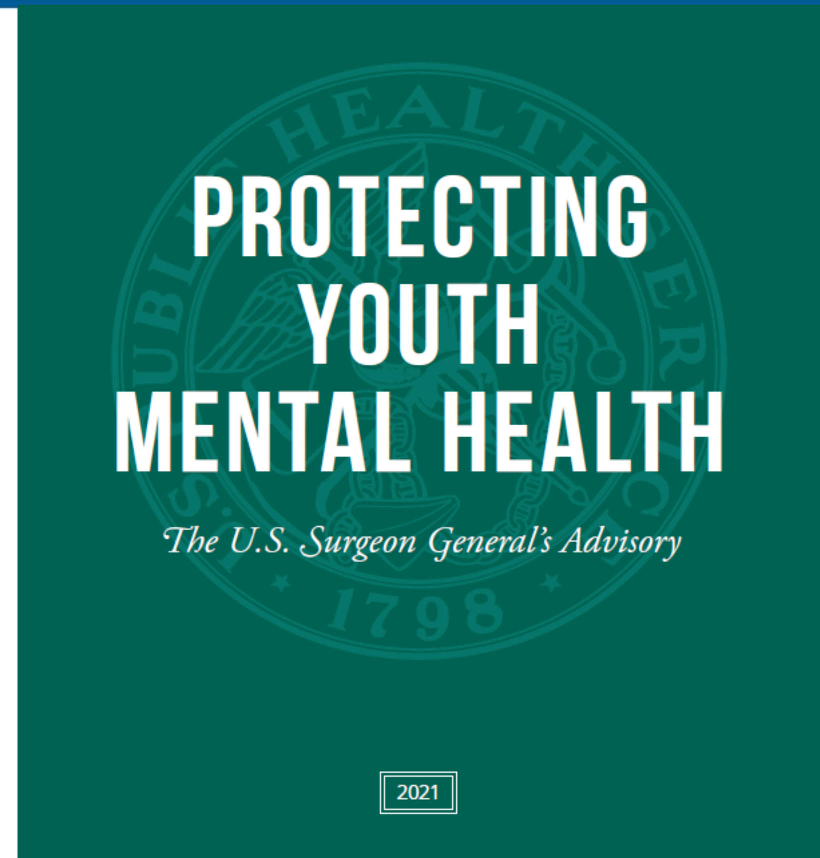
- Surgeon General Youth Mental Health
  - leading cause disability and poor life outcomes



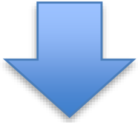


Prevalence of Behavioral and Mental Health Diagnoses up to Age 18

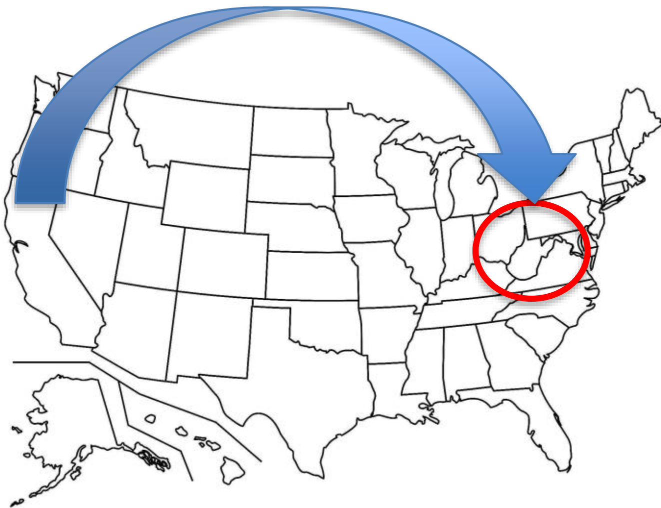
surgeon-general-youth-mental-health-advisory.pdf; rwjf.org

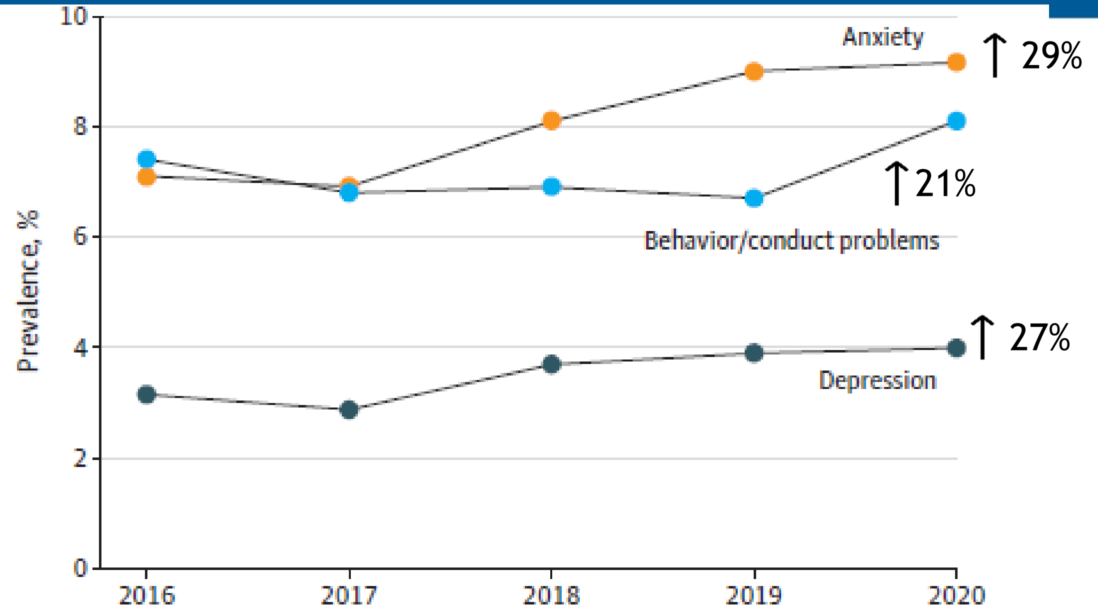
Behavioral Health Prevalence

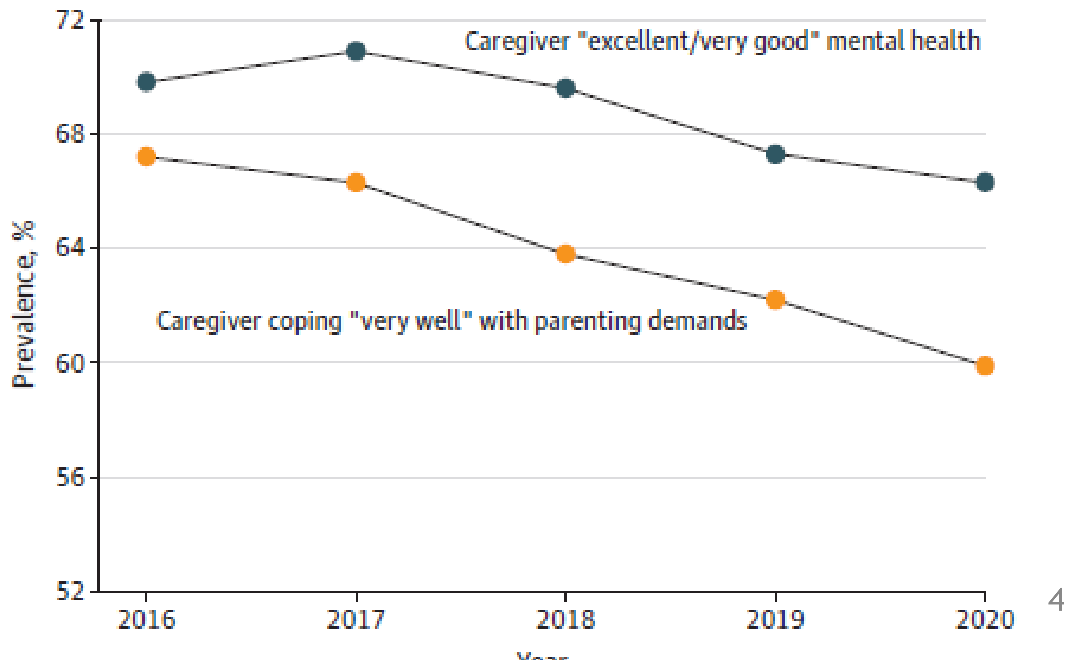
1.8 million CA children



West Virginia population







www.ccha.org/; mchb.hrsa.gov/

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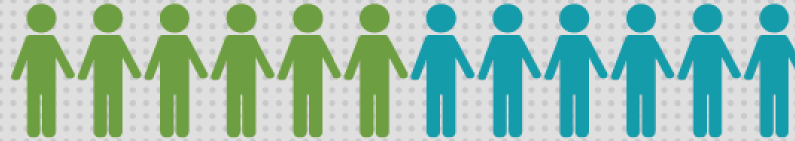
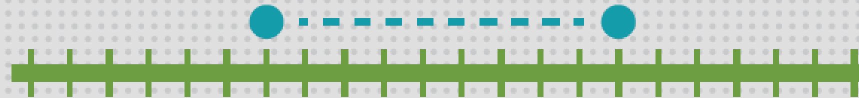
Behavioral Health Outcomes

Impact



50%

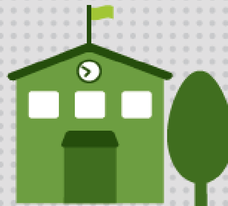
50% of all lifetime cases of mental illness begin by age 14 and 75% by age 24.[1]



10 yrs

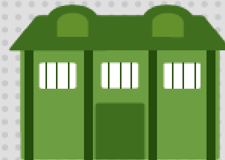
The average delay between onset of symptoms and intervention is 8-10 years.[1]

37%



37% of students with a mental health condition age 14 and older drop out of school—the highest dropout rate of any disability group.[1]

70%



70% of youth in state and local juvenile justice systems have a mental illness.[1]

NAMI Children MH fact sheet

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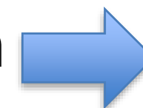
COVID Behavioral Health

- High school students' experiences during the pandemic:
  - 50% emotional abuse
  - 44% sadness/hopelessness persistently
  - Females/LGB higher risk
  - Suicidality
    - 20% seriously considered
    - 9% attempted past year
    - American Indian/Alaska Native highest suicide attempts
  - 36% experienced racism in school



64% Asian, 55% Black, 55% multiracial, 23% White, 27% AI/AN

Rico A, et al. MMWR Suppl 2022

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Behavioral Health Crisis

"…prioritizing public policies and programs ensure safe environments for children requires bipartisan action and investments in behavioral and mental health screening."

Call to Action: www.childrenshospitals.org/

Developmental Health Epidemic

1 in 6 children affected

Condition	Prevalence
Any Developmental Delay	1 in 10
Autism Spectrum Disorder	1 in 44
Cerebral Palsy	1 in 345
Intellectual Disability	1 in 100
Hearing Impairment	1 in 500
Learning Disability	1 in 12
Speech & Language Delay/Disorder	Some Delay: 1 in 6 by 36 months Dx Impairment: 1 in 13 by kindergarten
Attention Deficit Hyperactivity Disorder	1 in 12

www.cdc.gov/ncbddd/; Sices, 2007

Learning Objectives

1. Define the DBP perspective and scope of practice understanding the biopsychosocial origins of DBP disorders.
2. Specify 4 screening tools to help diagnose patients with concerns for developmental delay, ADHD and autism.
3. Identify 2 evidence-based therapy and 2 medication interventions for ADHD and ASD.
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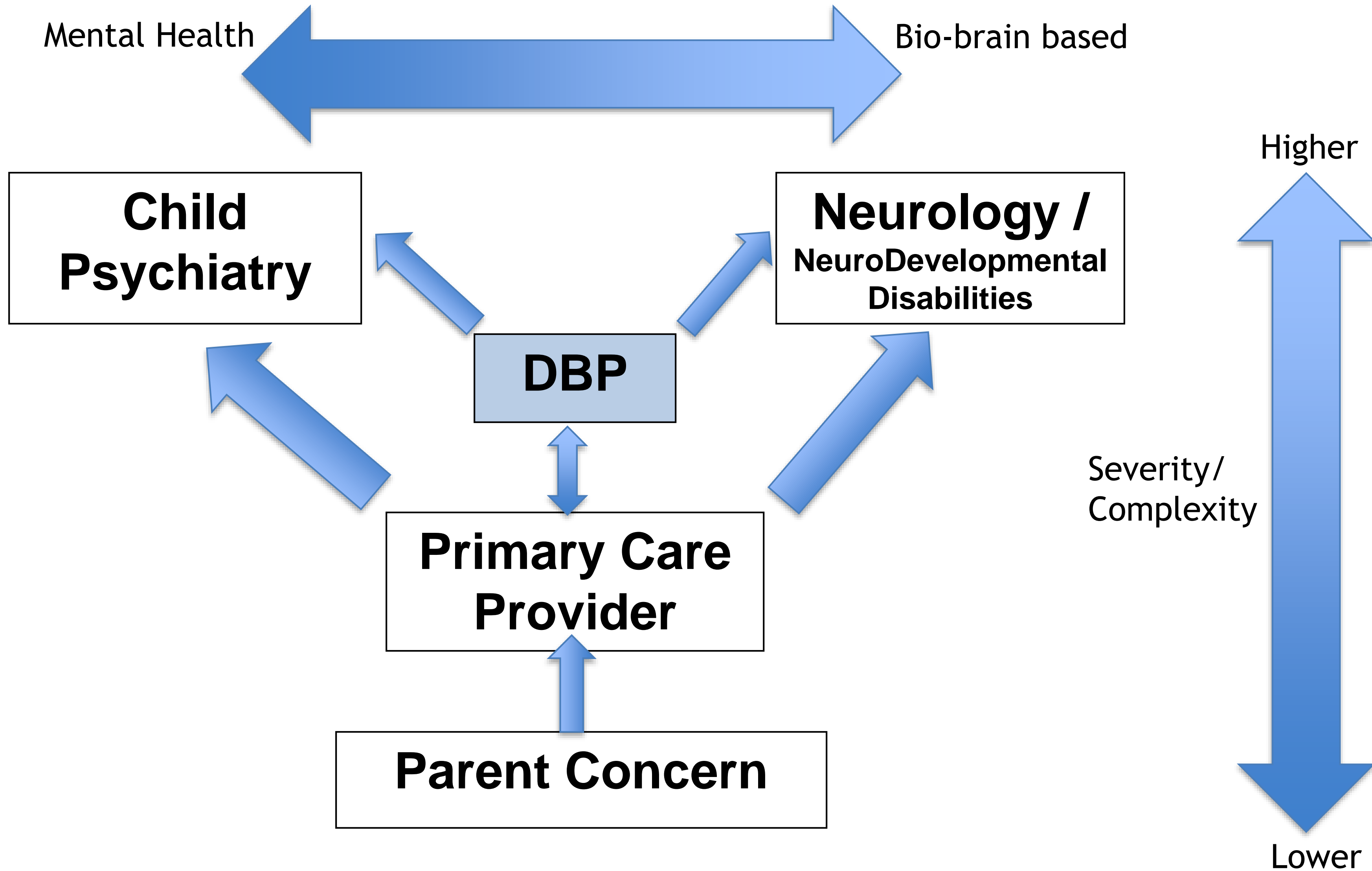
What is DBP?

- **Developmental-Behavioral Pediatrics**
- Boarded subspecialty of pediatrics (3 more years)
- Focuses on the normal processes of change in functional domains
  - motor skills, thinking, communication, social and emotional functioning and behavior regulation
- Evaluates and manages infants, children, adolescents, and youth
  - with or at risk for developmental-behavioral disorders
  - with developmental delays in a functional domain
- Examples of diagnoses
  - Normal range, autism spectrum, ADHD, depression, learning disability, learning style difference, disruptive behavior, etc.

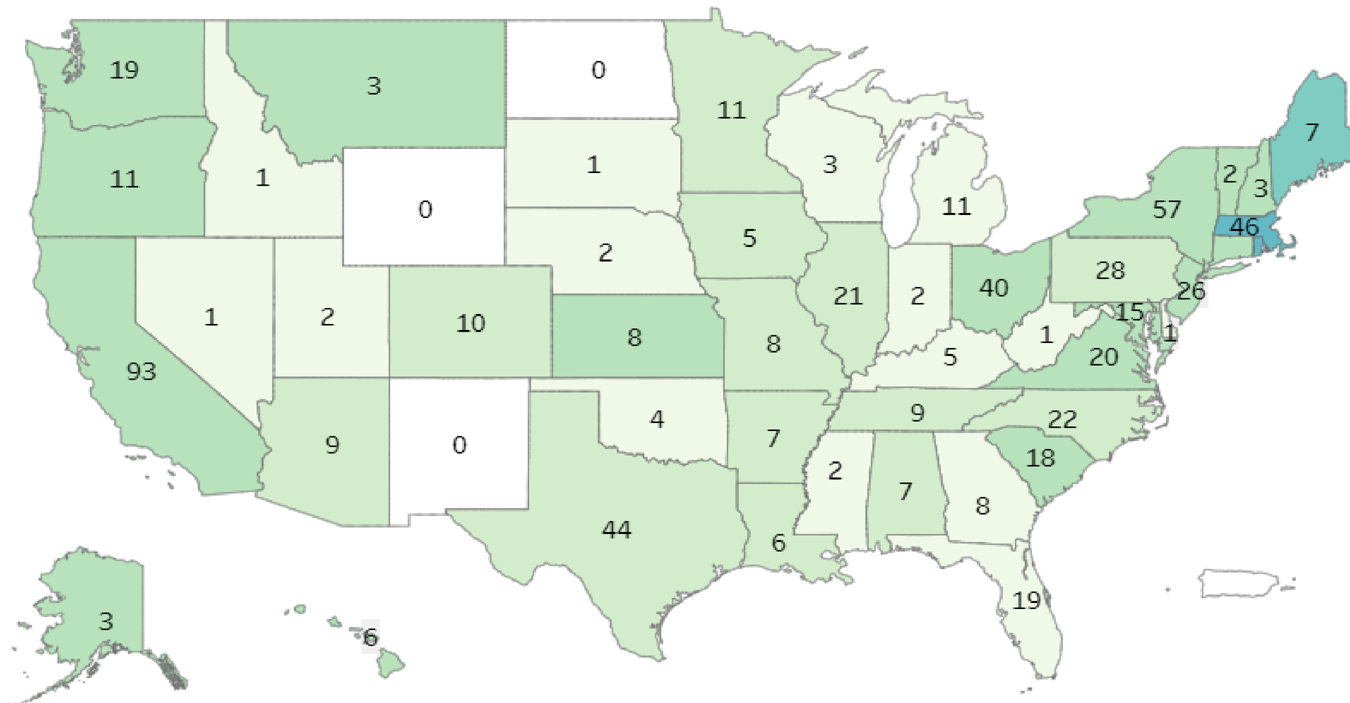
http://dbp.mchtraining.net/mission.php

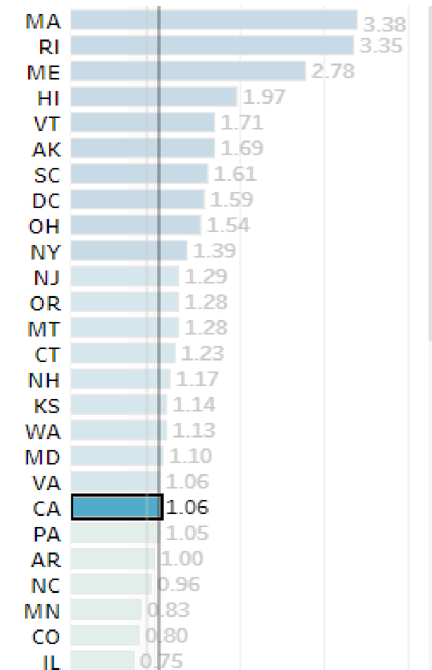
Scope Spectrum



State of the DBP Field

- 113 DBPs in-training
- 964 ever certified DBPs
- 93 DBPs in CA (#16th in US)
- 45 accredited fellowship programs
- 53 years average age





www.abp.org

DBP Workforce Shortage

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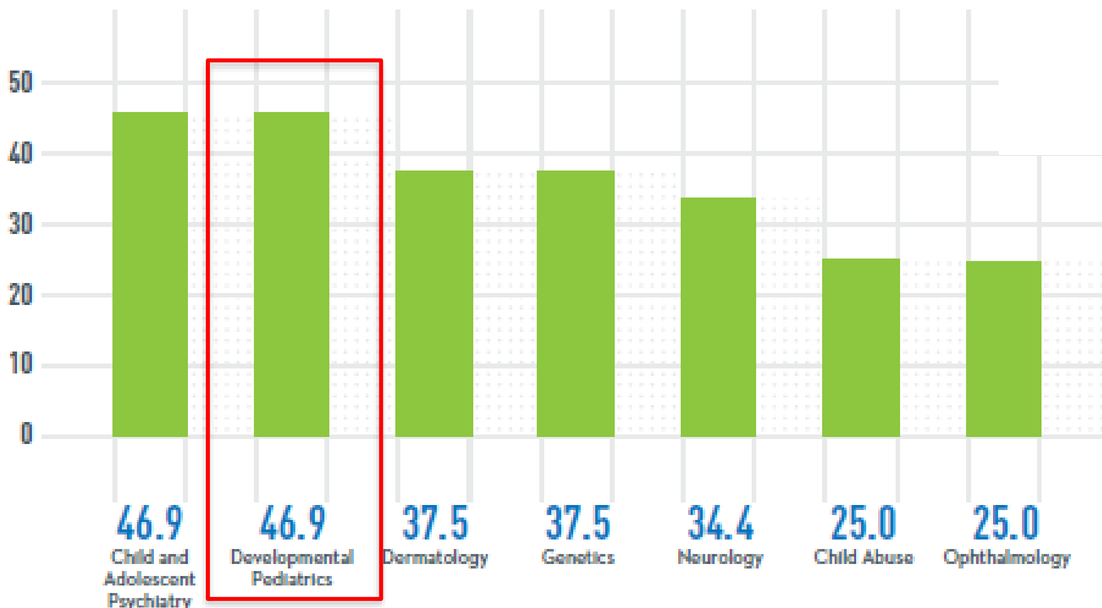
SPECIALTIES WITH THE HIGHEST AVERAGE WAIT TIMES:

- Genetics 20.8 WEEKS
- Developmental Pediatrics 18.7 WEEKS
- Pain Management Palliative Care 12.1 WEEKS
- Child and Adolescent Psychiatry 9.9 WEEKS
- Dermatology 8.3 WEEKS
- Allergy and Immunology 7.7 WEEKS
- Dentistry 7.6 WEEKS

TOP-RANKED SHORTAGES THAT AFFECT ABILITY TO DELIVER CARE

- 11.8% DEVELOPMENTAL PEDIATRICS
- 10.8% CHILD AND ADOLESCENT PSYCHIATRY
- 9.7% PEDIATRIC NEUROLOGY
- 8.6% GENETICS
- 7.5% CHILD ABUSE

PERCENT OF HOSPITALS REPORTING VACANCIES



Children's Hospital Association, 2017

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Mental Health Diagnoses

20% behavioral/emotional disorder

- Internalizing Behaviors
  - Anxiety disorders- Separation and Reactive attachment
  - Mood disorders / Suicidal behavior
  - Obsessive-compulsive behavior
- Externalizing Conditions
  - Aggressive behavior
  - Oppositional defiant disorder (ODD)/Conduct disorder (CD)
  - Attention Deficit Hyperactivity Disorder (ADHD)
- Substance Use/Abuse
- Child Abuse and Neglect
  - Parental Depression and PTSD
  - Domestic Violence and Munchausen by proxy
- Somatoform Disorders and Pain
- Sleep Problems
- Feeding and Eating Problems
- Elimination Disorders

Weitzman, 2015

Development-1

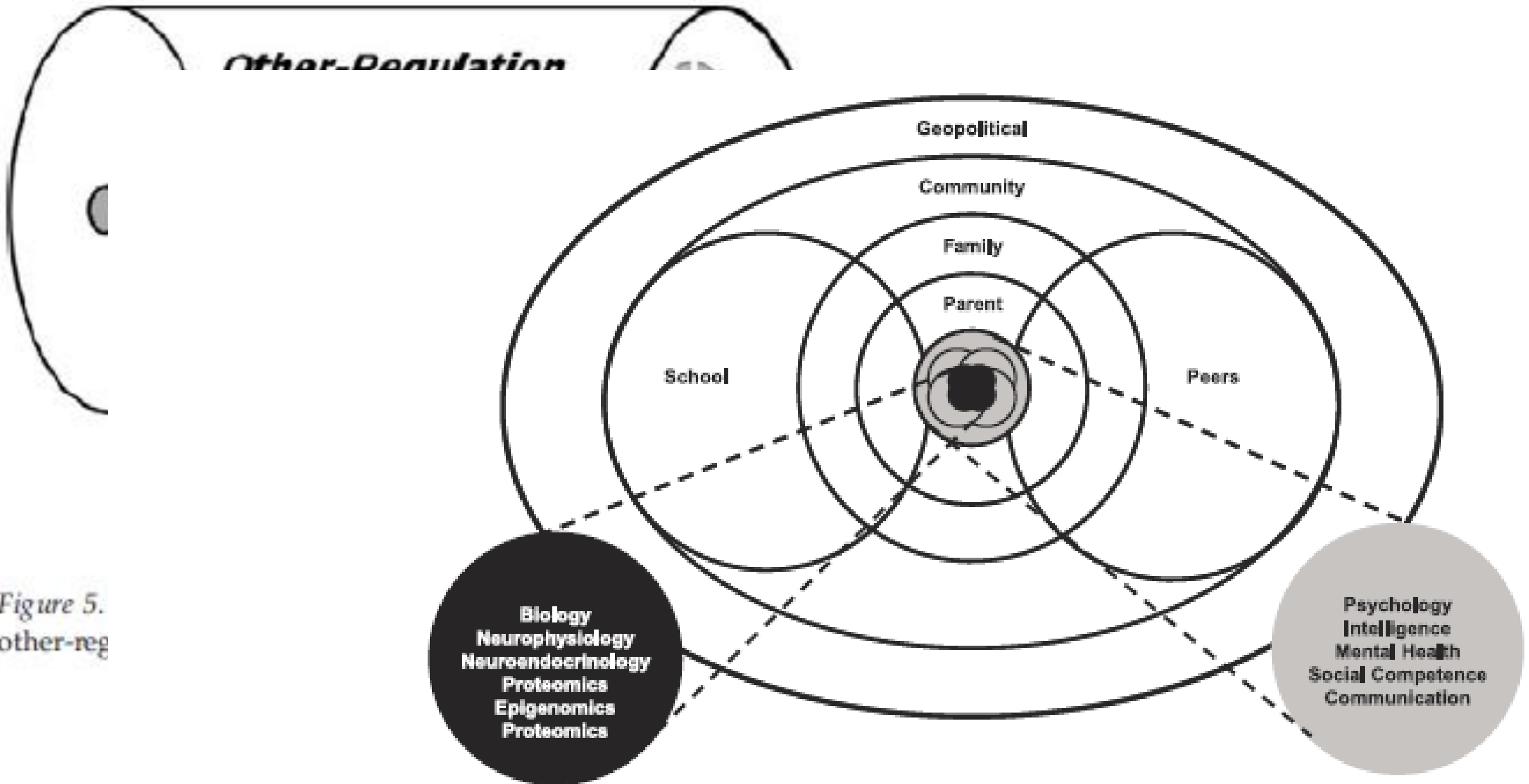


Figure 6. Biopsychosocial ecological system.

Sameroff, 2010

Development- 2

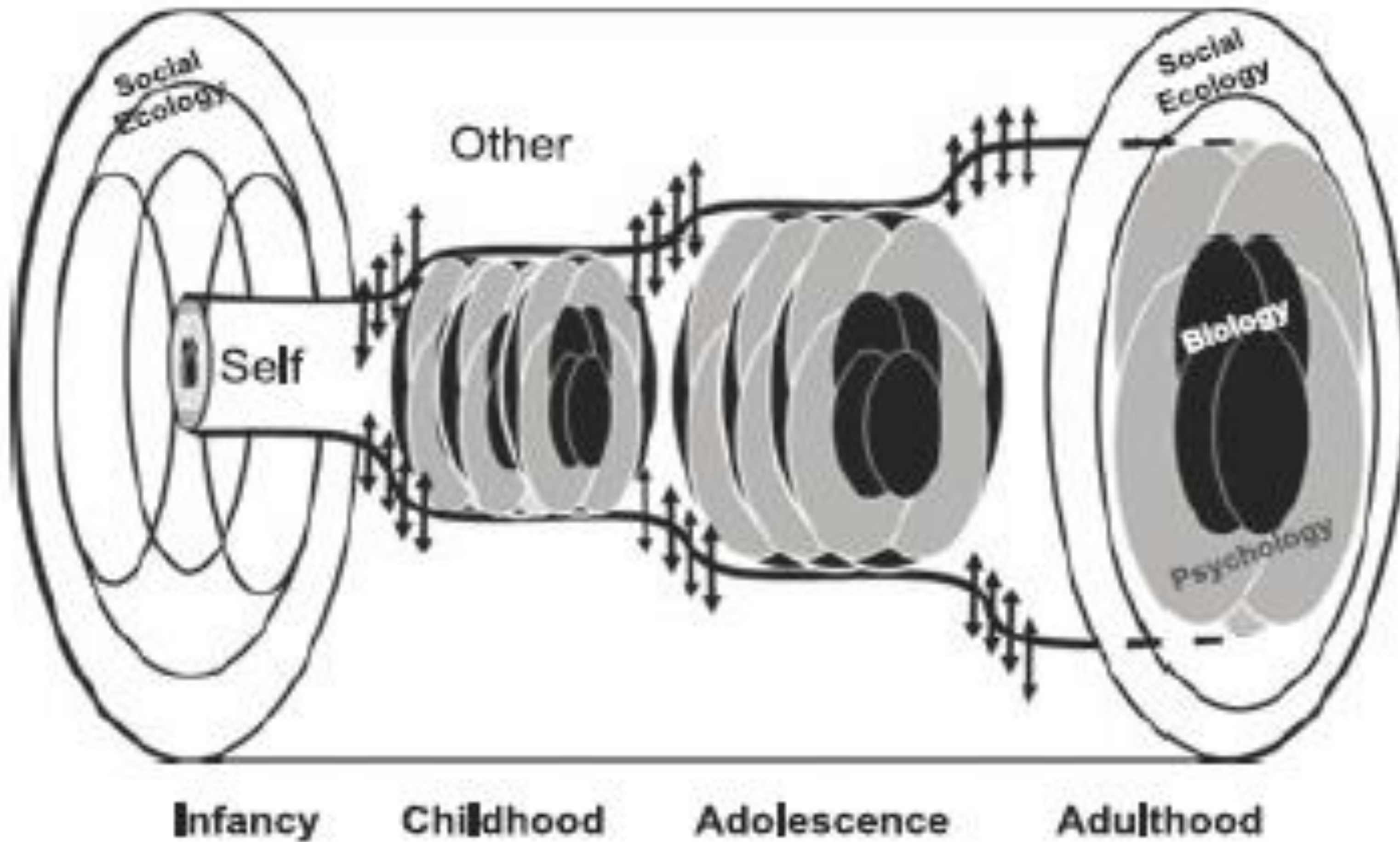


Figure 7. Unified theory of development including the personal change, context, and regulation models.

Sameroff, 2010

Life Course Model

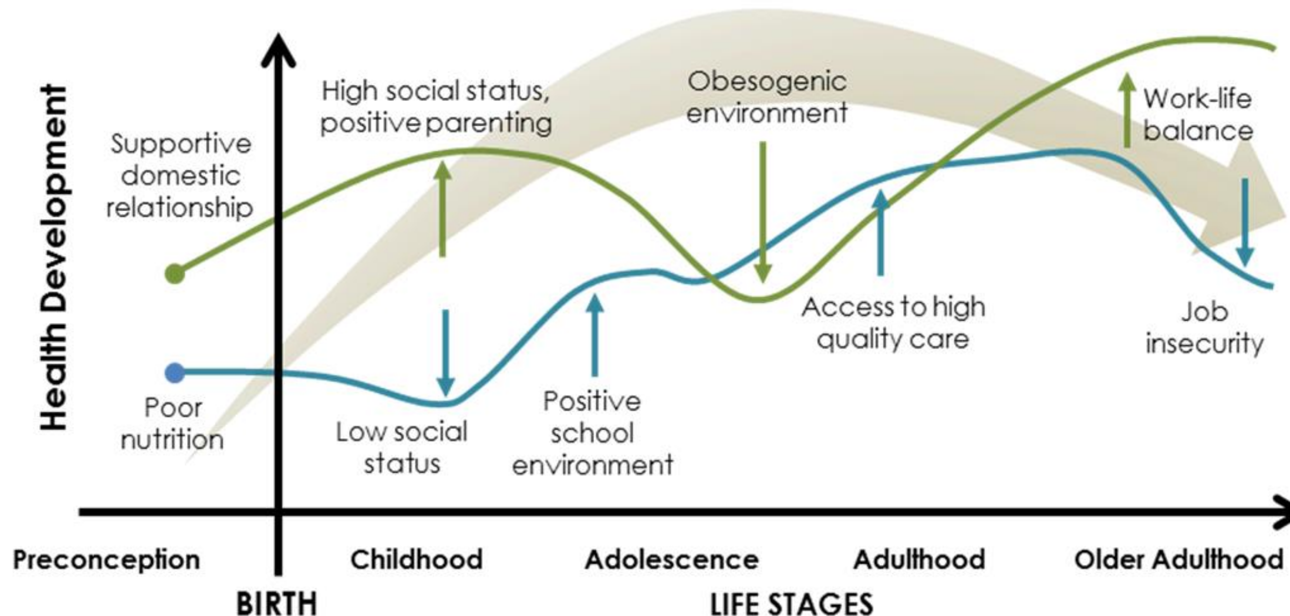
HEALTH DEVELOPMENT TRAJECTORIES

Patterns of changes in health assets over time, affected by environmental and intrinsic factors.

1
LATENT EFFECTS
Resulting from experiences, particularly during sensitive periods, that influence health later in life.

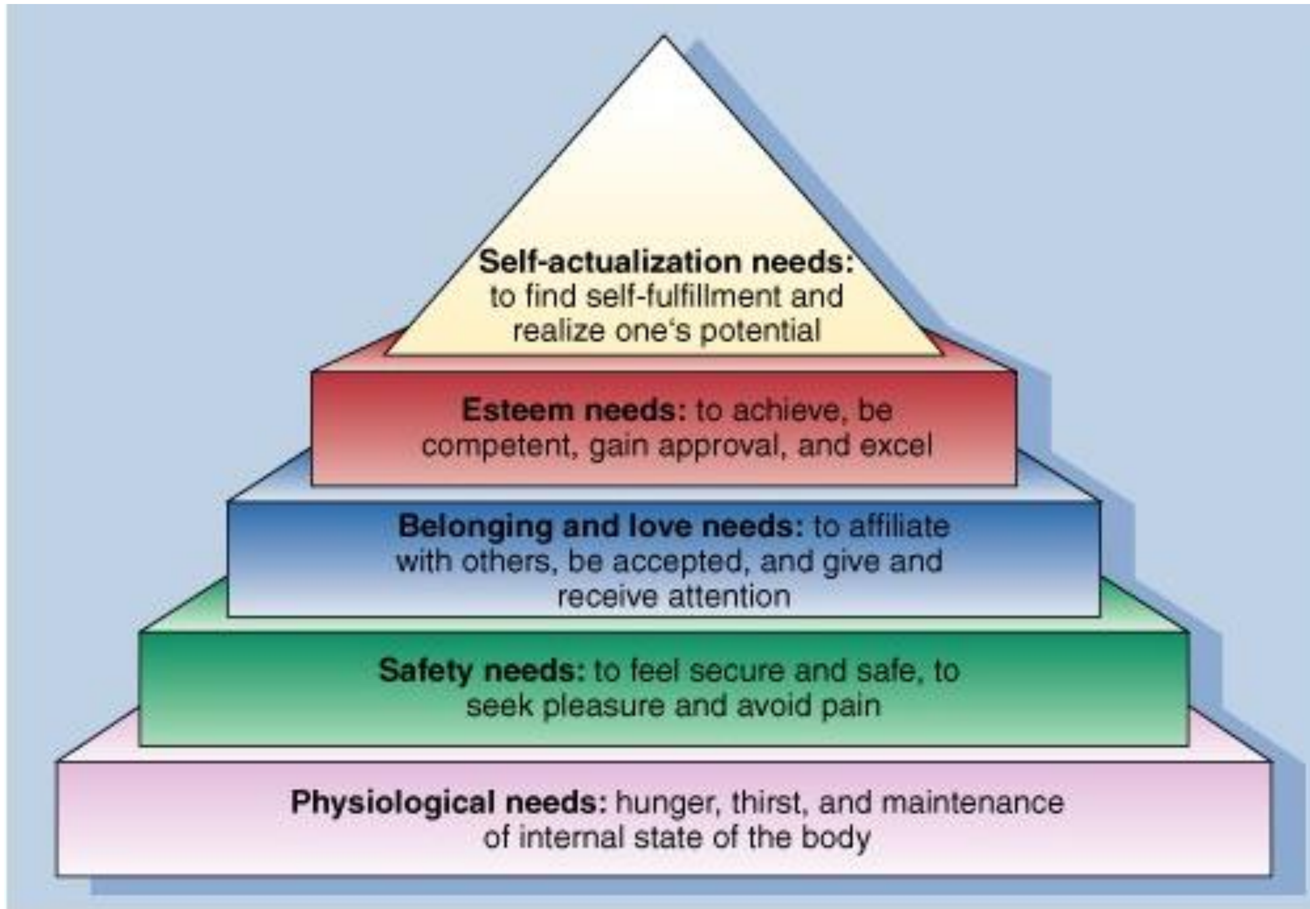
2
PATHWAY EFFECTS
Resulting from experiences that set people on certain health development trajectories.

3
CUMULATIVE EFFECTS
Resulting from experiences that accumulate over time & manifest in health. (Combination of latent and pathway effects)



www.lcrn.net

Where is the Family?



Data based on Hierarchy of Needs in "A Theory of Human Motivation" in *Motivation and Personality* by Abraham H. Maslow. Copyright © 1979 by Abraham H. Maslow. Reprinted by permission of Harper & Row Publishers, Inc.

© 2000 John Wiley & Sons, Inc.

Maslow, 1979

Learning Objectives

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Screening Tools

- Developmental delay-
  - ASQ- https://agesandstages.com/ (0-5 years)
  - SWYC- https://www.tuftschildrenshospital.org/the-survey-of-wellbeing-of-young-children/overview (0-5 ½ years)
  - PEDS- https://www.pedstest.com/ (0-8 years)
- ADHD-
  - Vanderbilt ADHD Rating Scales- https://www.nichq.org/resource/nichq-vanderbilt-assessment-scales
  - Conners Rating Scale- https://www.pearsonassessments.com/store/usassessments/en/Store/Professional-Assessments/Behavior/Comprehensive/Conners-3rd-Edition/p/100000523.html
- Autism-
  - MCHAT-R- https://mchatscreen.com/
  - Communication and Symbolic Behavior Scales Developmental Profile- https://brookespublishing.com/product/csbs-dp/
  - Childhood Autism Spectrum Test- https://www.autismresearchcentre.com/tests/childhood-autism-spectrum-test-cast/ (5-11 years)

Case Presentation

- 4 1/2 year old male
  - poor attention and social interaction problems in preschool
  - talks back to the teacher and doesn't mind his parents at home
  - having difficulties learning to read letters
  - parents don't agree on the reasons for his problems and argue frequently.
  - No significant past medical history
  - father had trouble in school

More Info

- What do you want to know?
- What's your differential?
- Which screening tools?
- What would you do?

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Development

SWYC:™ 48 months

47 months, 0 days to 58 months, 31 days
V1.08, 9/1/19

Child's Name:
Birth Date:
Today's Date:

DEVELOPMENTAL MILESTONES

Most children at this age will be able to do some (but not all) of the developmental tasks listed below. Please tell us how much your child is doing each of these things. PLEASE BE SURE TO ANSWER ALL THE QUESTIONS.

	Not Yet	Somewhat	Very Much
Compares things - using words like "bigger" or "shorter"	0	1	2
Answers questions like "What do you do when you are cold?" or "…when you are sleepy?"	0	1	2
Tells you a story from a book or tv	0	1	2
Draws simple shapes - like a circle or a square	0	1	2
Says words like "feet" for more than one foot and "men" for more than one man	0	1	2
Uses words like "yesterday" and "tomorrow" correctly	0	1	2
Stays dry all night	0	1	2
Follows simple rules when playing a board game or card game	0	1	2
Prints his or her name	0	1	2
Draws pictures you recognize	0	1	2

PRESCHOOL PEDIATRIC SYMPTOM CHECKLIST (PPSC)

These questions are about your child's behavior. Think about what you would expect of other children the same age, and tell us how much each statement applies to your child.

		Not at all	Somewhat	Very Much
Does your child...	Seem nervous or afraid?	0	1	2
	Seem sad or unhappy?	0	1	2
	Get upset if things are not done in a certain way?	0	1	2
	Have a hard time with change?	0	1	2
	Have trouble playing with other children?	0	1	2
	Break things on purpose?	0	1	2
	Fight with other children?	0	1	2
	Have trouble paying attention?	0	1	2
	Have a hard time calming down?	0	1	2
	Have trouble staying with one activity?	0	1	2
Is your child...	Aggressive?	0	1	2
	Fidgety or unable to sit still?	0	1	2
	Angry?	0	1	2
Is it hard to...	Take your child out in public?	0	1	2
	Comfort your child?	0	1	2
	Know what your child needs?	0	1	2
	Keep your child on a schedule or routine?	0	1	2
	Get your child to obey you?	0	1	2

Tufts Children's Hospital

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************ Please continue on the back ************

PARENT'S CONCERNS

	Not At All	Somewhat	Very Much
Do you have any concerns about your child's learning or development?	○	○	○
Do you have any concerns about your child's behavior?	○	○	○

FAMILY QUESTIONS

Because family members can have a big impact on your child's development, please answer a few questions about your family below:

	Yes	No
1 Does anyone who lives with your child smoke tobacco?	Y	N
2 In the last year, have you ever drunk alcohol or used drugs more than you meant to?	Y	N
3 Have you felt you wanted or needed to cut down on your drinking or drug use in the last year?	Y	N
4 Has a family member's drinking or drug use ever had a bad effect on your child?	Y	N

	Never true	Sometimes true	Often true
5 Within the past 12 months, we worried whether our food would run out before we got money to buy more.	○	○	○

Over the past two weeks, how often have you been bothered by any of the following problems?	Not at all	Several days	More than half the days	Nearly every day
6 Having little interest or pleasure in doing things?	0	1	2	3
7 Feeling down, depressed, or hopeless?	0	1	2	3

8 In general, how would you describe your relationship with your spouse/partner?	No tension ○	Some tension ○	A lot of tension ○	Not applicable ○
9 Do you and your partner work out arguments with:	No difficulty ○	Some difficulty ○	Great difficulty ○	Not applicable ○

10 During the past week, how many days did you or other family members read to your child? 0 1 2 3 4 5 6 7

FORM	Age (m)	Needs Review	Appears to meet age expectations
36m	38 - 39	≤13	≥14
	40 - 41	≤14	≥15
	42 - 43	≤15	≥16
	44 - 46	≤16	≥17
48m	47	≤12	≥13
	48 - 50	≤13	≥14
	51 - 53	≤14	≥15
	54 - 57	≤15	≥16
	58	≤16	≥17
60m	59 - 65	No Milestones cut scores available	

NICHQ Vanderbilt Assessment Scale – PARENT Informant*

Today's Date: ________________ Child's Name: ____________________________ Date of Birth: ____________________

Parent's Name: ____ Parent's Phone Number: ___________________________

Directions: Each rating should be considered in the context of what is appropriate for the age of your child. When completing this form, please think about your child's behaviors in the past 6 months.

Is this evaluation based on a time when the child ☐ was on medication ☐ was not on medication ☐ not sure?

	Symptoms	Never	Occasionally	Often	Very Often
1.	Does not pay attention to details or makes careless mistakes with, for example, homework	0	1	2	3
2.	Has difficulty keeping attention to what needs to be done	0	1	2	3
3.	Does not seem to listen when spoken to directly	0	1	2	3
4.	Does not follow through when given directions and fails to finish activities (not due to refusal or failure to understand)	0	1	2	3
5.	Has difficulty organizing tasks and activities	0	1	2	3
6.	Avoids, dislikes, or does not want to start tasks that require ongoing mental effort	0	1	2	3
7.	Loses things necessary for tasks or activities (toys, assignments, pencils, or books)	0	1	2	3
8.	Is easily distracted by noises or other stimuli	0	1	2	3
9.	Is forgetful in daily activities	0	1	2	3
10.	Fidgets with hands or feet or squirms in seat	0	1	2	3
11.	Leaves seat when remaining seated is expected	0	1	2	3
12.	Runs about or climbs too much when remaining seated is expected	0	1	2	3
13.	Has difficulty playing or beginning quiet play activities	0	1	2	3
14.	Is "on the go" or often acts as if "driven by a motor"	0	1	2	3
15.	Talks too much	0	1	2	3
16.	Blurts out answers before questions have been completed	0	1	2	3
17.	Has difficulty waiting his or her turn	0	1	2	3
18.	Interrupts or intrudes in on others' conversations and/or activities	0	1	2	3
19.	Argues with adults	0	1	2	3
20.	Loses temper	0	1	2	3
21.	Actively defies or refuses to go along with adults' requests or rules	0	1	2	3
22.	Deliberately annoys people	0	1	2	3

www.nichq.org/childrens-health/adhd/resources/vanderbilt-assessment-scales

DSM-5- ADHD Definition

- Hyperactivity, impulsivity, inattention
- Reaches a defined threshold for 6 months
- 2 or more settings
- Symptoms before age 12
- Functional impairment- social, academic, occupational

ADHD Diagnosis Steps

1. Child and Parent interview:
   - medical evaluation
   - developmental history
   - psychosocial history
   - family mental health history
2. Behavioral rating scales
3. Assess functional impairment / safety
4. Consider differential possibilities
   - Think about the PECS
     - Physical (sleep, vision, hearing, medical)
     - Emotional/behavioral (mood, anxiety, trauma)
     - Cognitive (learning / intellectual disabilities)
     - Stressors (bullying, family conflict)
5. Apply Diagnostic Statistic Manual (DSM-5) criteria

ADHD Coexisting Conditions

Condition	Prevalence
Learning disability	40%
Oppositional defiant disorder	40%
Any Mental disorder	45%
Anxiety disorders	30%
Conduct disorder	26%
Depressive disorder	18%
Substance use disorders	14%
Compulsive disorder	15%
Bipolar disorder	11%
Tics	8%

Prince, 2006; Green 1999

Differential Conditions

- Externalizing Disorders
  - Oppositional defiant disorder
  - Conduct disorder
- Internalizing Disorders
  - Mood Disorders
  - Major depressive disorder
  - Dysthymic disorder
  - Anxiety Disorders
  - Post-traumatic stress disorder
  - Obsessive compulsive disorder
  - Panic disorder
  - Generalized anxiety disorder
  - Phobias
- Cognitive Deficits
  - Learning disabilities
  - Language disorders
- Motoric Conditions
  - Developmental coordination disorder
  - Tourette's or chronic tic disorder
- ASD
- Medical Conditions
  - Sleep problems

Learning Disability Screening

- Grades
- School screener or IEP
- Family History of learning problems
- Office screeners
  - Parent Questionnaire
    - http://dyslexiatest.me/
  - One Minute Reading Test
    - https://www.dyslexia-international.org/content/Informal%20tests/oneminutereadingtest.pdf

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Anxiety Screening: SCARED

Screen for Child Anxiety Related Disorders (SCARED) Parent Version

Directions: Below is a list of sentences that describe how people feel. Read each phrase and decide if it is "Not True or Hardly Ever True", or "Somewhat True or Sometimes True", or "Very True or Very Often True" for your child. Then, for each sentence, write the number that corresponds to the response that seems to describe your child for the last 3 months.	**0 = Not True or Hardly Ever True** **1= Somewhat True or Sometimes True** **2= Very True or Often True**
1. When my child feels frightened, it is hard for him/her to breathe.	
2. My child get headaches when he/she is at school.	
3. My child doesn't like to be with people he/she doesn't know well.	
4. My child gets scared if he/she sleeps away from home.	
5. My child worries about other people liking him/her.	
6. When my child gets frightened, he/she feels like passing out.	
7. My child is nervous.	
8. My child follows me wherever I go.	
9. People tell me that my child looks nervous.	
10. My child feels nervous with people he/she I doesn't know well.	
11. My child gets stomachaches at school.	

SCORING:

A total score of ≥ **25** may indicate the presence of an **Anxiety Disorder**. Scores higher than 30 are more specific. **TOTAL =**

A score of **7** for items 1, 6, 9, 12, 15, 18, 19, 22, 24, 27, 30, 34, 38 may indicate **Panic Disorder** or **Significant Somatic Symptoms**. **PN =**

A score of **9** for items 5, 7, 14, 21, 23, 28, 33, 35, 37 may indicate **Generalized Anxiety Disorder**. **GD =**

A score of **5** for items 4, 8, 13, 16, 20, 25, 29, 31 may indicate **Separation Anxiety SOC**. **SP =**

A score of **8** for items 3, 10, 26, 32, 39, 40, 41 may indicate **Social Anxiety Disorder**. **SC =**

A score of **3** for items 2, 11, 17, 36 may indicate **Significant School Avoidance**. **SH =**

www.pediatricbipolar.pitt.edu/resources/instruments

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Depression Screening: PHQ-9

PATIENT HEALTH QUESTIONNAIRE (PHQ-9)

NAME:______________________ DATE:____________

Over the last *2 weeks,* how often have you been bothered by any of the following problems? *(use "✓" to indicate your answer)*	Not at all	Several days	More than half the days	Nearly every day
1. Little interest or pleasure in doing things	0	1	2	3
2. Feeling down, depressed, or hopeless	0	1	2	3
3. Trouble falling or staying asleep, or sleeping too much	0	1	2	3
4. Feeling tired or having little energy	0	1	2	3

Interpretation of Total Score

Total Score	Depression Severity
1-4	Minimal depression
5-9	Mild depression
10-14	Moderate depression
15-19	Moderately severe depression
20-27	Severe depression

www.integration.samhsa.gov/images/res/PHQ%20-%20Questions.pdf

Learning Objectives

1. Define the DBP perspective and scope of practice understanding the biopsychosocial origins of DBP disorders.
2. Specify 4 screening tools to help diagnose patients with concerns for developmental delay, ADHD and autism.
3. **Identify 2 evidence-based therapy and 2 medication interventions for ADHD and ASD.**
4. Recognize the role of Adverse Childhood Experiences (ACEs) / trauma exposure/ racism in DBP conditions.

Primary Care Approach

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, FAAFP,[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

Attention-deficit/hyperactivity disorder (ADHD) is one of the most common neurobehavioral disorders of childhood and can profoundly affect children's academic achievement, well-being, and social interactions. The American Academy

abstract

[a]Section of Developmental and Behavioral Pediatrics, University of Oklahoma, Oklahoma City, Oklahoma; [b]Department of Pediatrics, The

Pediatrics (2019) 144 (4): e20192528

2019 AAP ADHD Guidelines Strong Evidence

1. Primary care evaluation 4-18 yrs
2. Use DSM-5, 2 settings
3. Screen for co-existing conditions
4. Chronic condition in medical home
5. Age based treatments
    1. 4-5 yr- 1st behavior thx, 2nd stimulant/alpha agonist
    2. 6-11 yr- meds + behavioral thx
    3. 12-18 yr- meds +/- behavioral thx
6. Titrate doses- benefit vs. adverse reaction
7. Address co-existing conditions or refer…

Pediatrics (2019) 144 (4): e20192528;
publications.aap.org/pediatrics/article/144/4/e20192528/81590

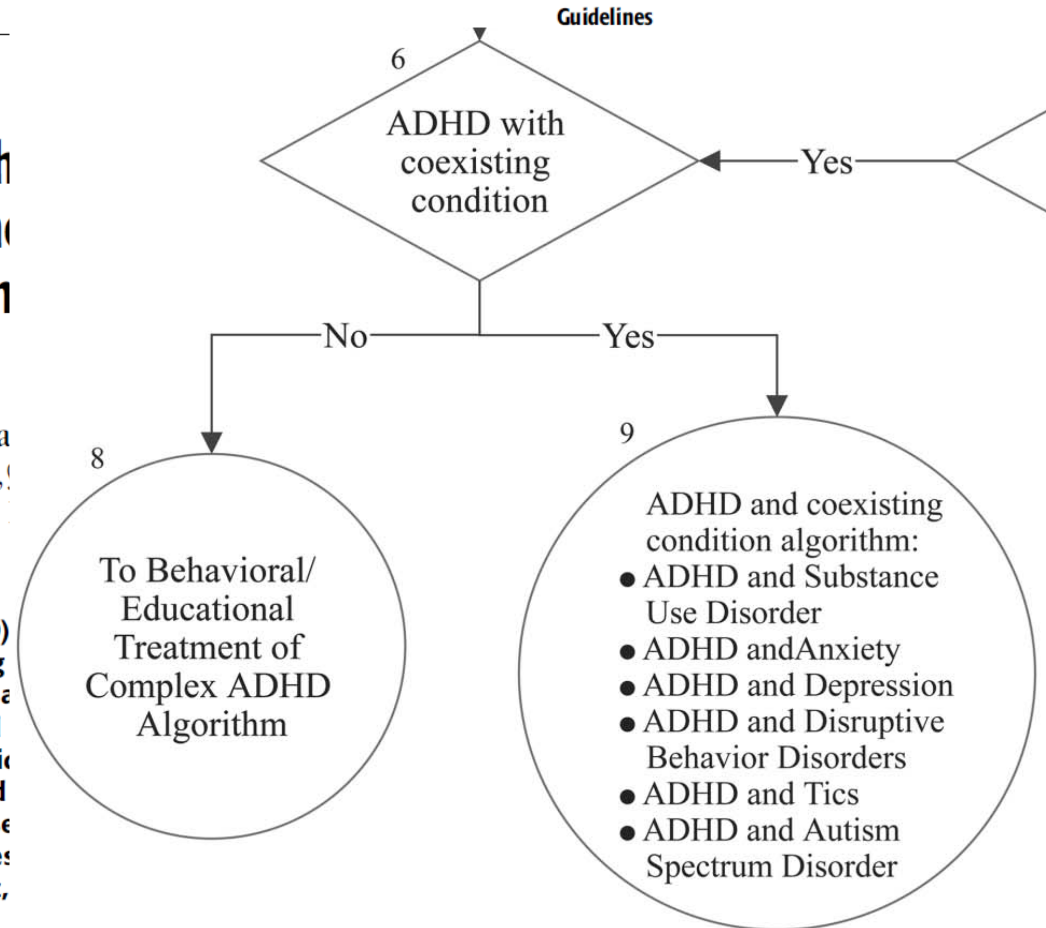
SDBP Complex ADHD Guidelines

Society for Developmental and Beh Practice Guideline for the Assessm Children and Adolescents with Con Deficit/Hyperactivity Disorder

William J. Barbaresi, MD (Guideline Panel Chair),* Lisa Elizabeth A. Diekroger, MD,‡ Tanya E. Froehlich, MD,(William E. Pelham Jr, PhD, ABPP,** Thomas J. Power, Eugenia Chan, MD, MPH*

ABSTRACT: Attention-deficit/hyperactivity disorder (ADHD) disorder and is associated with an array of coexisting and treatment. ADHD and its coexisting conditions ma school, peers, community), placing the affected child chosocial outcomes in adulthood. Current practice gui mary care setting. The Society for Developmental and guideline to facilitate integrated, interprofessional asse with "complex ADHD" defined by age (<4 years or pre conditions, moderate to severe functional impairment, treatment.

(*J Dev Behav Pediatr* 41:S1–S23, 2020) **Index terms:** attention-deficit/hyperactivity disorder, ADHD, clinical practice guideline, children, adolescents.



Complex ADHD =

- <4 or >12 years
- co-existing conditions
- >moderate impairment
- high uncertainty
- poor response to treatment

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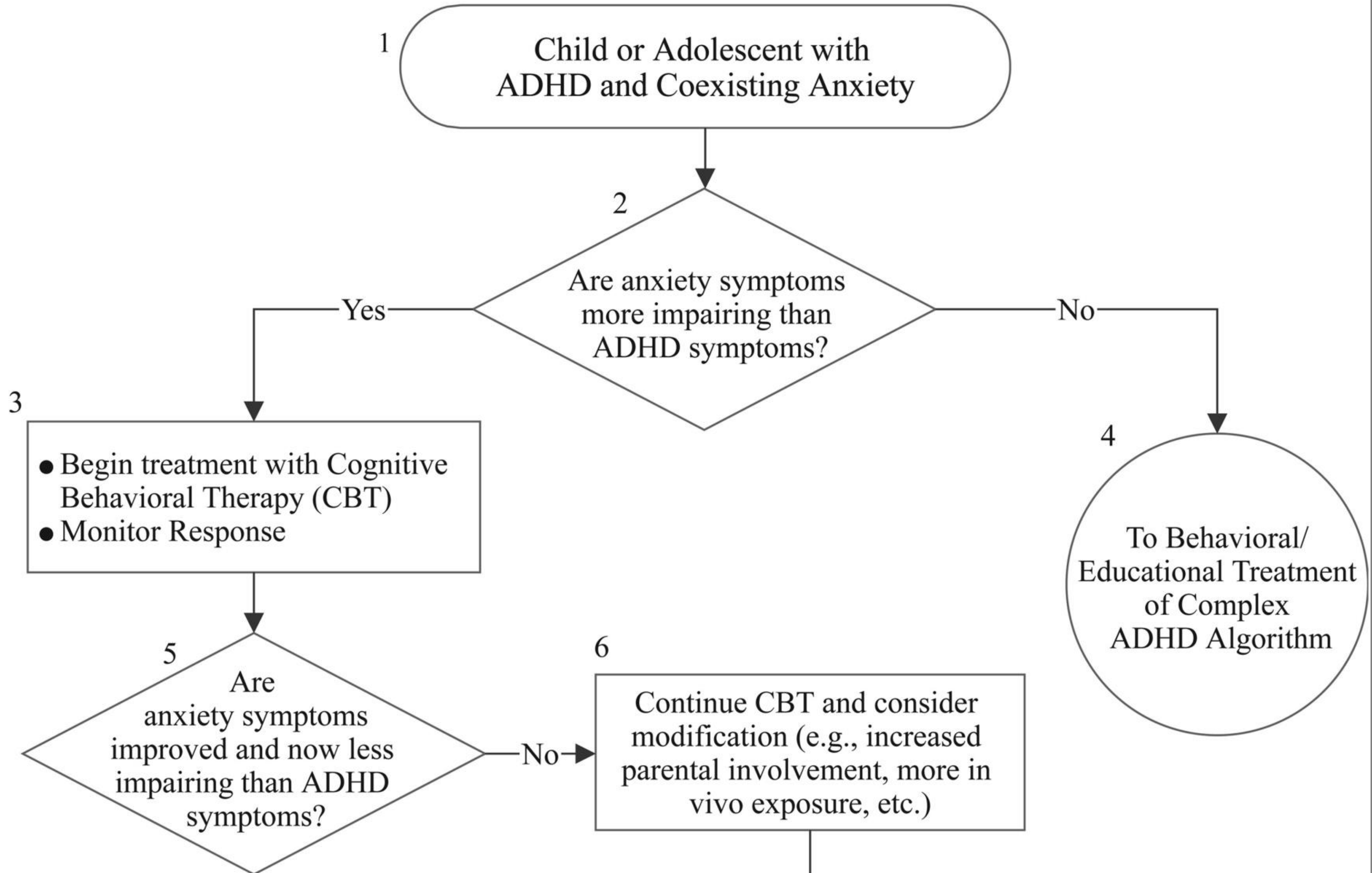

Wolters Kluwer

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Barbaresi, et al. Journal of Developmental & Behavioral Pediatrics41:S58-S74, 2020.

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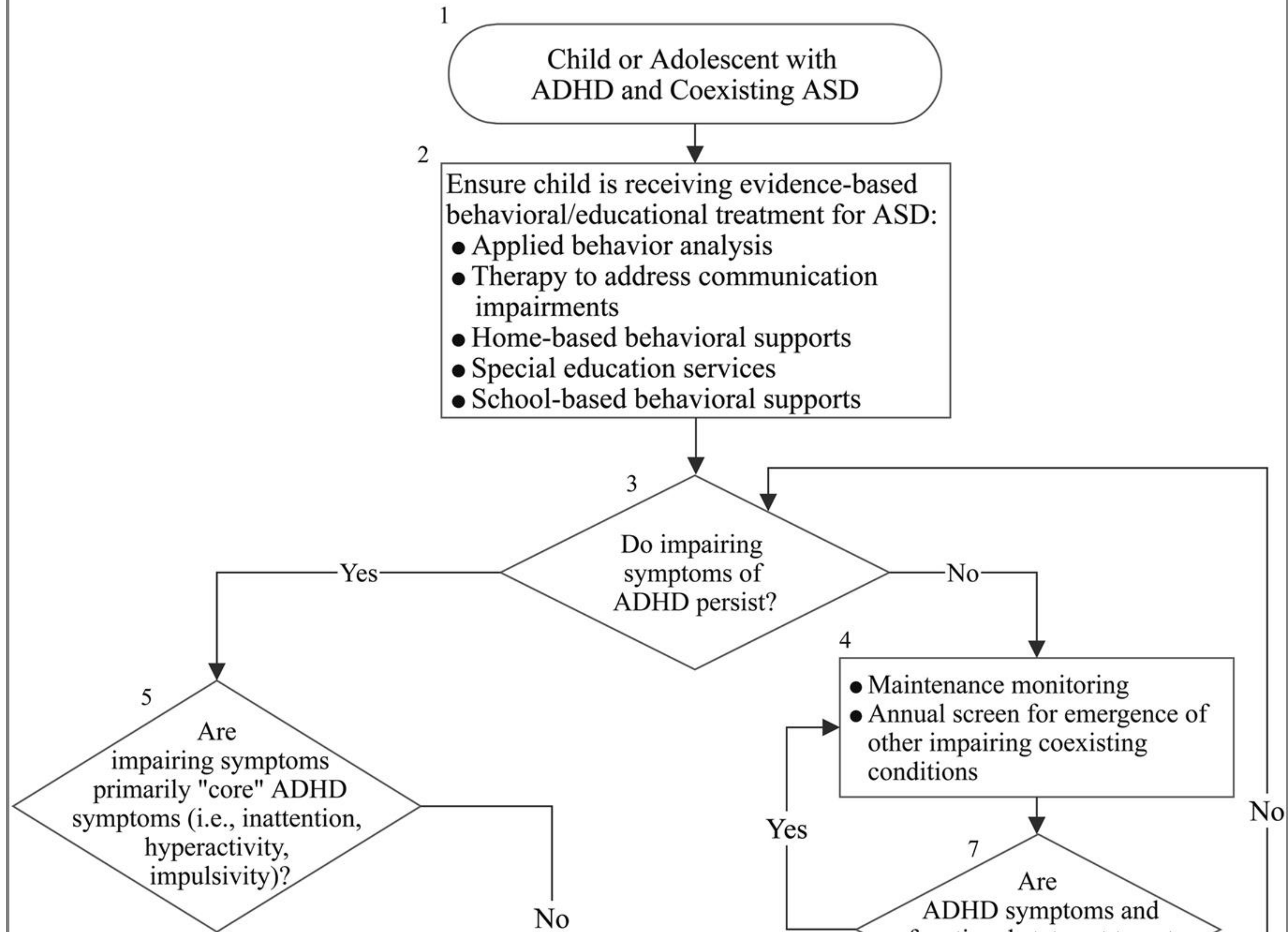

Behavioral Strategies

TABLE 1 Evidence-Based Behavioral Treatments for ADHD

Intervention Type	Description	Typical Outcome(s)
Behavioral parent training (BPT)	Behavior-modification principles provided to parents for implementation in home settings	Improved compliance with parental commands; improved parental understanding of behavioral principles; high levels of parental satisfaction with treatment
Behavioral classroom management	Behavior-modification principles provided to teachers for implementation in classroom settings	Improved attention to instruction; improved compliance with classroom rules; decreased disruptive behavior; improved work productivity
Behavioral peer interventions (BPI)[b]	Interventions focused on peer interactions/relationships; these are often group-based interventions provided weekly and include clinic-based social-skills training used either alone or concurrently with behavioral parent training and/or medication	Office-based interventions have produced minimal effects; interventions have been of questionable social validity; some studies of BPI combined with clinic-based BPT found positive effects on parent ratings of ADHD symptoms; no differences on social functioning or parent ratings of social behavior have been revealed

Pediatrics. 2011;128(5):1007–1022

Target Symptoms

Improvement Focus

- Hyperactivity
- Attention span
- Impulsivity and self control
- Physical and verbal aggression
- Academic productivity

Maybe Improvement

- Reading skills
- Social skills
- Academic achievement
- Antisocial behavior
- Learning disability

- Start low, go slow, but go!

Stimulants first

- methylphenidate, dexmethylphenidate
- lisdexamfetamine, mixed amphetamine salts
- side effects- appetite, moody, headache, sleep
- ECG only if risk factors present

Second line consider

- guanfacine (6-17 yr)
- clonidine (6-17 yr)
- atomoxetine (>6 yr)

Medication Pearls

- 2 X methylphenidate = 1 X amphetamine
- Racemic twice as potent as non racemic
- Titrate weekly
- If one doesn't work after max tolerable dose, try the other class.
- If that doesn't work, revisit your diagnosis.
- If that doesn't work, refer!

ADHD Medication Guide*

Revised: October 1, 2022

Methylphenidate Formulations – Long Acting** (Capsules and tablets in this section are shown at actual size)

Medication	Dosing									
Concerta®†	6-12 Yrs: 18-54mg; SD: 18mg 13-17 Yrs: 18-72mg; SD: 18mg ≥18 Yrs: 18-72mg; SD: 18mg or 36mg	G 18mg	G 27mg	G 36mg	G 54mg	G 72mg		Methylphenidate ER 72mg (bioequivalent to 2 x 36 mg Concerta tablets)		
Aptensio® XR‡	6 Yrs–Adult: 10–60mg; SD: 10mg (biphasic – 40/60)	10mg	15mg	20mg	30mg	40mg	50mg	60mg		
Cotempla XR-ODT®¶ (grape flavor)	6-17 Yrs: 8.6–51.8mg; SD: 17.3mg	8.6mg		17.3mg	25.9mg	34.6mg		51.8mg		
Focalin® XR‡ (dexmethylphenidate)	6-17 Yrs: 5–30mg; SD: 5mg 18 Yrs-Adult: 5–30mg; SD: 5mg (biphasic – 50/50)	G 5mg		G 10mg	G 15mg	G 20mg	G 25mg	G 30mg	G 35mg	G 40mg
Quillivant XR® 25mg/5mL (5mg/mL) (banana flavor)	6 Yrs–Adult: 20–60mg; SD: 20mg	10mg 2mL; 1 Bottle: 300mg 60mL		20mg 4mL; 1 Bottle: 600mg 120mL	30mg 6mL; 1 Bottle: 900mg 180mL	40mg 8mL; 2 Bottles: 600mg 120mL	50mg 10mL; 2 Bottles: 750mg 150mL	60mg 12mL; 2 Bottles: 900mg 180mL		
Quillichew ER®§ (cherry flavor)	6 Yrs–Adult: 20–60mg; SD: 20mg			20mg	30mg	40mg				

www.adhdmedicationguide.com

ADHD Medications

Medication	Usual Starting Dose	Usual Maximum Dose (mg/kg/d)	Usual Dosing Intervals (hours)
Methylphenidate (MPH)	5 mg qd/bid	2	tid (4)
Dexmethylphenidate	2.5 mg	1	bid (5 - 6)
OROS MPH	18 mg qd	2	qd (12)
MPH- long acting	10 mg qd	2	qd (6 - 8)
Dexmethylphenidate- long acting	5 mg qd	1	qd (10 -12)
Amphetamine mixed salts	2.5 - 5 mg	1.0	bid (6)
Amphetamine mixed salts- long acting	5-10 mg	1.0	qd (12)
Lisdexamfetamine	20 mg	70 mg/day	qd (10-12)
Guanfacine-long acting	1 mg	3-4 mg/day	qd (24)
Atomoxetine	0.5mg/kg	1.4	qd (24)

Stimulants- side effects- appetite, moody, headache, sleep, ECG for risk factor only

www.adhdmedicationguide.com; Lexicomp; Prince, 2006

Clinical Attention Problem Scale

Please complete once a week

Child's name: ____________________ **Today's date:** ____________________

Completed by: ____________________ **Medication:** ____________________

Below is a list of items that describe pupils. Rate each item that describes the pupil *now* or *within the last week as follows:*

0 = Not true **1 = Somewhat or Sometimes True** **2= Very or Often True**

Morning

	Item			
1.	Fails to finish things he/she starts	0	1	2
2.	Can't concentrate, can't pay attention for long	0	1	2
3.	Can't sit still, restless, or hyperactive	0	1	2
4.	Fidgets	0	1	2
5.	Daydreams or gets lost in his/her thoughts	0	1	2
6.	Impulsive, or acts without thinking	0	1	2
7.	Difficulty following directions	0	1	2
8.	Talks out of turn	0	1	2
9.	Messy	0	1	2
10.	Inattentive, easily distracted	0	1	2
11.	Talks too much	0	1	2
12.	Fails to carry out assigned tasks	0	1	2

Afternoon

	Item			
1.	Fails to finish things he/she starts	0	1	2
2.	Can't concentrate, can't pay attention for long	0	1	2
3.	Can't sit still, restless, or hyperactive	0	1	2
4.	Fidgets	0	1	2
5.	Daydreams or gets lost in his/her thoughts	0	1	2
6.	Impulsive, or acts without thinking	0	1	2
7.	Difficulty following directions	0	1	2
8.	Talks out of turn	0	1	2
9.	Messy	0	1	2
10.	Inattentive, easily distracted	0	1	2
11.	Talks too much	0	1	2
12.	Fails to carry out assigned tasks	0	1	2

Additional Comments:

www.catherinemccarthymd.com/pdf/CAP-Scale.pdf

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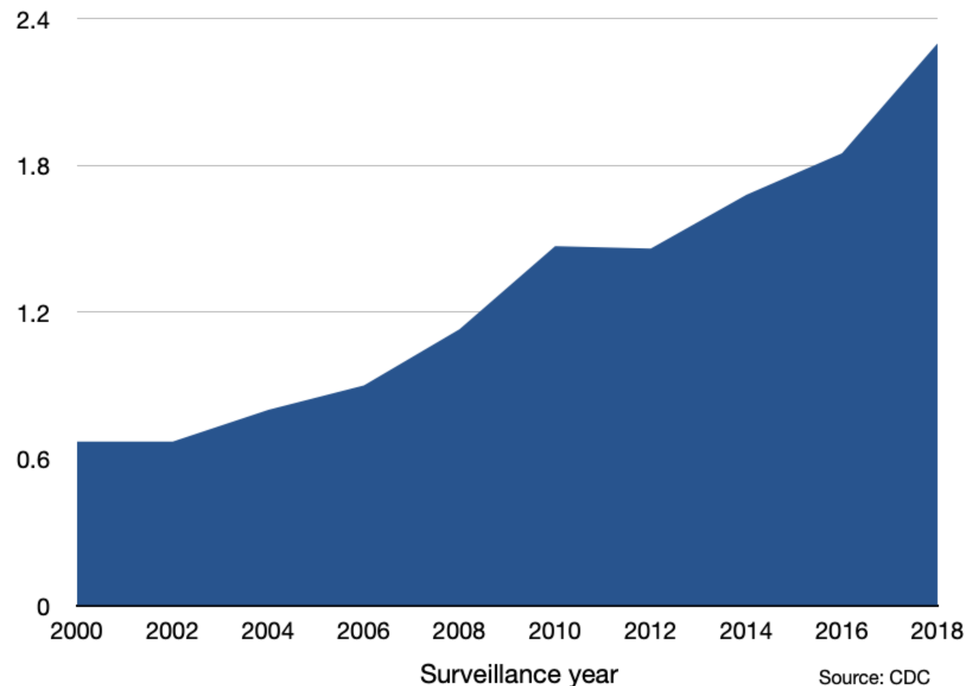
Other ADHD Referrals

- Behavioral treatment
- Other psychotherapy
- Special education evaluation
  - Psycho-educational evaluation
  - Speech and language testing
  - Fine motor testing
  - Sensory assessment
  - Autism assessment

Autism Spectrum Disorder

- 1 in 44 (CDC, 2021)
  - 1 in 27 boys / 1 in 116 girls
- Most diagnosed >4 years, possible by age 2
- All ethnic and SES groups but minority diagnosed later/less often
- No medical detection,
- Vaccines do not cause autism
- Intervention and Supports
  - Early intervention improves learning, communication, social skills
  - Behavioral therapy



DBP History Risk Factors

- Boys 4x more likely than girls
- Positive family history
  - Prior child with ASD (2-18%)
  - Identical twins (36-95%)
  - Non-identical twins (31%)
- Having neurodevelopmental disorders:
  - Fragile X syndrome
  - Tuberous sclerosis
  - Tourette's syndrome
  - Epilepsy
- Advanced maternal age
- Paternal age > 40 years 6x more likely than < 30 years
- Prematurity / low birth weight / perinatal risks
  - Gestational diabetes (40% risk)

www.mayoclinic.com/autism/; Reichenberg, 2006; Limperopoulos, 2008; Indredavik, 2008; Xiang, 2015

Figure 2. Prevalence of children aged 3–17 years ever diagnosed with autism spectrum disorder, by sex, age, and race and ethnicity: United States, 2014–2016

Age g

Race a

Non-H

Non-H

Non-H

J Autism Dev Disord (2018) 48:333–340
DOI 10.1007/s10803-017-3330-y

ORIGINAL PAPER

Language Barriers Impact Access to Services for Children with Autism Spectrum Disorders

Helaine G. St. Amant[1] · Sheree M. Schrager[2] · Carolina Peña-Ricardo[3,5] · Marian E. Williams[1,4] · Douglas L. Vanderbilt[1,3]

Published online: 7 October 2017
© Springer Science+Business Media, LLC 2017

Abstract Racial and ethnic disparities in accessing health care have been described in children with autism spectrum disorder (ASD). In a retrospective chart review of 152 children with ASD, children of parents whose primary language

Keywords Autism spectrum disorder · Health care disparities · Individualized education plan · Language barriers · Access to services

4

Percent

CDC: National Health Interview Survey 2014-2016

The Childhood Autism Spectrum Test (CAST)

Child's Name: .... Age: .... Sex: Male / Female

Birth Order: .... Twin or Single Birth: ....

Parent/Guardian: ....

Parent(s) occupation: ....

Age parent(s) left full-time education: ....

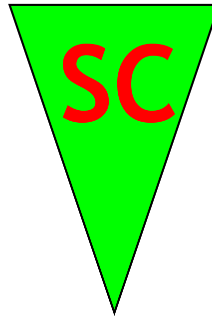
Address: ....
....
....

Tel No: .... School: ....

Please read the following questions carefully, and circle the appropriate answer responses are confidential.

1. Does s/he join in playing games with other children easily?	Yes	No
2. Does s/he come up to you spontaneously for a chat?	Yes	No
3. Was s/he speaking by 2 years old?	Yes	No
4. Does s/he enjoy sports?	Yes	No
5. Is it important to him/her to fit in with the peer group?	Yes	No
6. Does s/he appear to notice unusual details that others miss?	Yes	No
7. Does s/he tend to take things literally?	Yes	No
8. When s/he was 3 years old, did s/he spend a lot of time pretending (e.g., play-acting being a superhero, or holding teddy's tea parties)?	Yes	No
9. Does s/he like to do things over and over again, in the same way all the time?	Yes	No
10. Does s/he find it easy to interact with other children?	Yes	No
11. Can s/he keep a two-way conversation going?	Yes	No
12. Can s/he read appropriately for his/her age?	Yes	No
13. Does s/he mostly have the same interests as his/her peers?	Yes	No
14. Does s/he have an interest which takes up so much time that s/he does little else?	Yes	No
15. Does s/he have friends, rather than just acquaintances?	Yes	No
16. Does s/he often bring you things s/he is interested in to show you?	Yes	No
17. Does s/he enjoy joking around?	Yes	No
18. Does s/he have difficulty understanding the rules for polite behaviour?	Yes	No
19. Does s/he appear to have an unusual memory for details?	Yes	No
20. Is his/her voice unusual (e.g., overly adult, flat, or very monotonous)?	Yes	No
21. Are people important to him/her?	Yes	No
22. Can s/he dress him/herself?	Yes	No
23. Is s/he good at turn-taking in conversation?	Yes	No
24. Does s/he play imaginatively with other children, and engage in role-play?	Yes	No
25. Does s/he often do or say things that are tactless or socially inappropriate?	Yes	No
26. Can s/he count to 50 without leaving out any numbers?	Yes	No
27. Does s/he make normal eye-contact?	Yes	No
28. Does s/he have any unusual and repetitive movements?	Yes	No
29. Is his/her social behaviour very one-sided and always on his/her own terms?	Yes	No
30. Does s/he sometimes say "you" or "s/he" when s/he means "I"?	Yes	No

Social Communication



Interests

Social-Communication (all):

- Social-emotional reciprocity- back and forth
- Nonverbal communicative behaviors- eye contact
- Relationships- friends

Interests (2):

- Stereotyped/repetitive speech- echolalia
- Excessive routines/ritualized patterns- flapping
- Restricted/fixated interests- trains
- Sensory Integration problems- hypo/hyper

www.dsm5.org

American Acad
DEDICATED TO THE H
California District

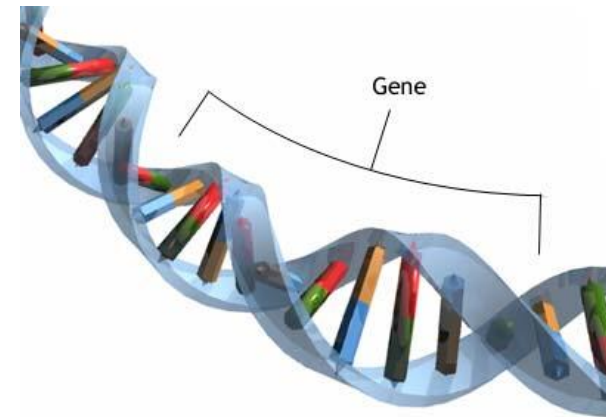
Autism: Diagnosis in Evolution and Opportunity for Pediatric Intervention

Douglas Vanderbilt, MD; Marian E. Williams, PhD

The Centers for Disease Control recently reported an increase to 1 in 110 children with an autism spectrum disorder (ASD). Here in California, the Regional Centers are reporting

Medical Work-up

1. History
   - Seizures, GI, Sleep, Regression
2. Physical examination
   - Head circumference, dysmorphia
3. Audiology evaluation
4. Genetic testing (up to 30%)
   - Microarray analysis + fragile X + …
5. Not recommended:
   - EEG / MRI / Metabolic / GI / Allergy studies / Heavy metal testing



ACMG, 2013; Lainhart, 2006; Caronna, 2008

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Primary Treatment

Educational Interventions

- Comprehensive programs
  - Behavioral Therapy
  - Early Start Denver Model
- Developmental- Floortime
- Social skills instruction
- Speech/language therapy
- Occupational / sensory integration therapy

https://community.undivided.io/news/166739

EVIDENCE-BASED PRACTICES

*Indicates practices with newly developed content (2015-2016). Select the practice to access these modules and downloadable resources.

Antecedent-based Intervention (ABI)*

Cognitive Behavioral Intervention (CBI)**

Differential Reinforcement of Alternative, Incompatible, or Other Behavior (DRA/I/O)

Discrete Trial Teaching (DTT)*

Exercise (ECE)*

Extinction (EXT)

Functional Behavior Assessment (FBA)*

Functional Communication Training (FCT)

Modeling (MD)*

Naturalistic Intervention (NI)

Parent-implemented Intervention (PII)

Peer-mediated Instruction and Intervention (PMII)*

Picture Exchange Communication System (PECS)*

Pivotal Response Training (PRT)

Prompting (PP)*

Reinforcement (R+)*

Response Interruption/Redirection (RIR)

Scripting (SC)**

Self-management (SM)*

Social Narratives (SN)*

Social Skills Training (SST)*

Previously Social Skills Groups

Structured Play Group (SPG)**

Task Analysis (TA)*

Technology-aided Instruction and Intervention (TAII)** *Previously Computer Aided Instruction and Speech Generating Devices*

Time Delay (TD)*

Video Modeling (VM)

Visual Support (VS)*

www.autismpdc.fpg.unc.edu/; Myers, 2007; Dawson, 2009

Behavioral Medications

45% on psychotropic meds

Symptom	Medication
Repetitive, rigid, obsessive	**SSRI**
Hyperactive, impulsive, inattentive	**Stimulants** **Alpha 2-adrenergic agonist antihypertensive agents**
Aggressive, self injurious	**Atypical antipsychotic agents**
Depressive, anxiety	**SSRI**
Cycling mood / behavior	**Antiepleptic drugs**
No indications	**Secretin, chelators, antibiotics, supplements, Omega-3 fatty acids**

Witwer, 2005

Other ASD Referrals

- Individualized Education Programs (IDEA Part B)
  - Comprehensive programs
  - Social skills groups
  - OT, SLT, Behavioral therapy
- Regional Center or Early Intervention (IDEA Part C)
  - Respite
  - Family Resource Centers
  - Behavioral classes / therapy

Learning Objectives

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2. Specify 4 screening tools to help diagnose patients with concerns for developmental delay, ADHD and autism.
3. Identify 2 evidence-based therapy and 2 medication interventions for ADHD and ASD.
4. **Recognize the role of Adverse Childhood Experiences (ACEs) / trauma exposure/ racism in DBP conditions.**

ACES

ABUSE

Physical abuse

NEGLECT

Physical neglect

HOUSEHOLD STRESS

Mental illness

Substance abuse

Adverse childhood experiences
(Leaves and branches)

Adverse community environments
(Roots)

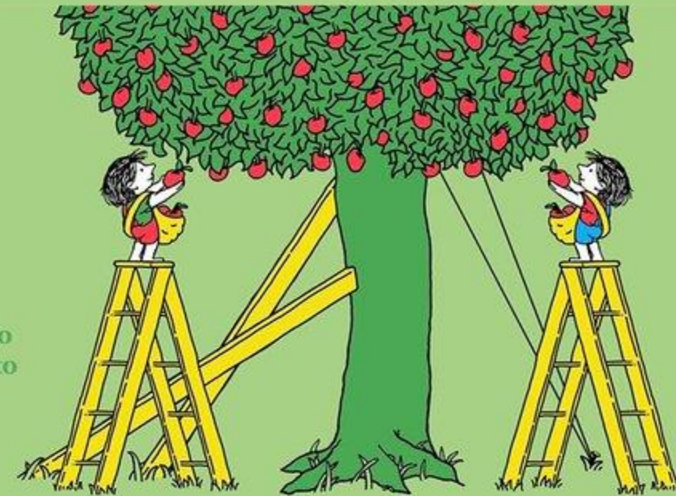
Adverse collective historical experiences (Soil)

www.hmprg.org/wp-content/uploads/2019/02/Role-of-Community-in-Trauma-Resilience-and-Healing.pdf

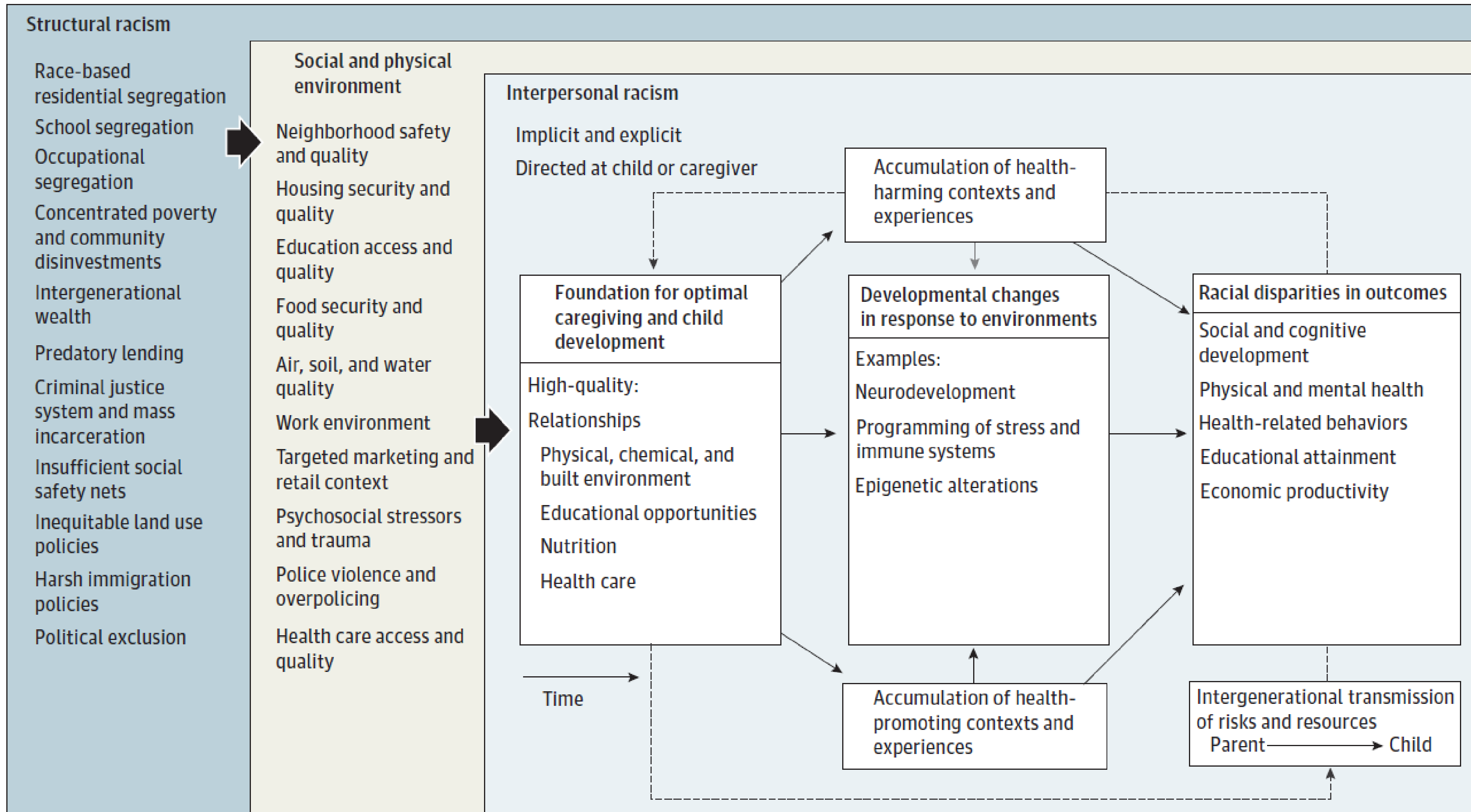
Inequality
Unequal access to opportunities
?
With apologies to Shel Silverstein from @lunchbreath
2019 Design In Tech Report | Addressing Imbalance

Equity
Custom tools that identify and address inequality
With apologies to Shel Silverstein from @lunchbreath
2019 Design In Tech Report | Addressing Imbalance

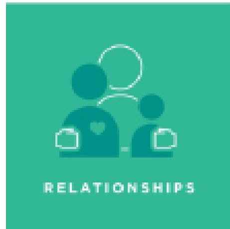
Equality?
Evenly distributed tools and assistance
!
With apologies to Shel Silverstein from @lunchbreath
2019 Design In Tech Report | Addressing Imbalance

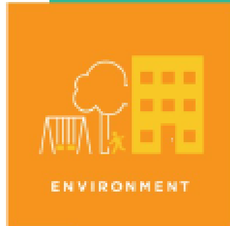

Justice
Fixing the system to offer equal access to both tools and opportunities
With apologies to Shel Silverstein from @lunchbreath
2019 Design In Tech Report | Addressing Imbalance

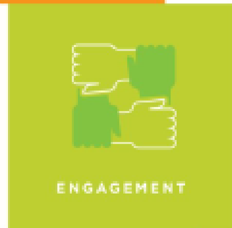
Providers Must Consider

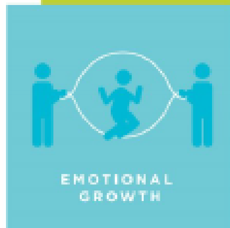


Heard-Garris, Slopen- JAMA Pediatrics, 2021









The Four Building Blocks

Through our work we have identified four building blocks that promote positive experiences that help children grow into healthy, resilient adults. We know that PCES in these four areas can buffer against long term health outcomes associated with adverse childhood experiences, and we want to help increase access to these opportunities for all children and families.

Relationships within the family and with other children and adults through interpersonal activities

Safe, equitable, stable environments for living, playing, learning at home and in school

Social and civic engagement to develop a sense of belonging and connectedness.

Emotional growth through playing and interacting with peers for self-awareness and self-regulation

HOPE

JAMA Pediatrics | Original Investigation

Positive Childhood Experiences and Adult Mental and Relational Health in a Statewide Sample

Associations Across Adverse Childhood Experiences Levels

Christina Bethell, PhD, MBA, MPH; Jennifer Jones, MSW; Narangerel Gombojav, MD, PhD; Jeff Linkenbach, EdD; Robert Sege, MD, PhD

Shared Decision Making

	Take medicine (for behavior)	Don't take medicine (for behavior)
What is usually involved?	• You learn about the medicine. You learn what symptoms it can help with. You learn what side effects to watch for. • You give medicines every day. • You talk with the school team, health team, and others who work with your child to see how well the medicines are working. • You watch your child for side effects. • You meet with your health care provider regularly.	• You can work with your health care provider and others to determine if health problems or other factors might make behavior worse. • You can consider other ways to teach desired behavior and reduce problem behavior. • You can find other ways to reduce family stress. You can ask family or friends to help you. You can find respite or other community supports to help your child and family.

Systems-Based Practice

https://buildinitiative.org/wp-content/uploads/2021/06/build-infographics-ovals-optimized.gif

buildinitiative.org/

County Wide Connector

(833) 903-3972 English Español

Help Me Grow LA

Families and Caregivers | Providers | Partners | Resources | Connect | About Us

HMG LA IS WORKING WITH PARTNERS TO IMPROVE DEVELOPMENT SCREENING IN LOCAL COMMUNITIES.

Learn more

publichealth.lacounty.gov/mch/helpmegrow/

(833) 903-3972

Summary

1. Understand DBP perspective complex biopsychosocial origins
2. Recognize how to screen for ADHD, ASD, Anxiety, Depression
3. Insist on the best practices for the treatment for ADHD and ASD
4. Know that care transcends our medical space

Thank you!

dvanderbilt@chla.usc.edu

FAQs

1. What is a Developmental-Behavioral Pediatrician?

a. A DBP is a subspecialty of pediatrics who uses a biopsychosocial behavioral approach to focus on the social, educational, and cultural influences in the treatment of developmental and behavioral disorders like ADHD and Autism. More information about DBP is at https://sdbp.org/about/developmental-behavioral-pediatrics-general-questions/

2. What are useful screening tools to identify developmental delay, ADHD and autism?

   www.aap.org/en/patient-care/mental-health-initiatives/

a. Developmental delay-

i. ASQ- https://agesandstages.com/
ii. SWYC- https://www.tuftschildrenshospital.org/the-survey-of-wellbeing-of-young-children/overview
iii. PEDS- https://www.pedstest.com/

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b. ADHD-

i. Vanderbilt ADHD Rating Scales- https://www.nichq.org/resource/nichq-vanderbilt-assessment-scales
ii. Conners Rating Scale- https://www.pearsonassessments.com/store/usassessments/en/Store/Professional-Assessments/Behavior/Comprehensive/Conners-3rd-Edition/p/100000523.html

c. Autism-

i. MCHAT-R- https://mchatscreen.com/
ii. Communication and Symbolic Behavior Scales Developmental Profile- https://brookespublishing.com/product/csbs-dp/
iii. Childhood Autism Spectrum Test- https://www.autismresearchcentre.com/tests/childhood-autism-spectrum-test-cast/

FAQs

3. A 4-year old presents with rating scales positive for ADHD in 2 settings. You would like to start treatment for this child. What would be the first treatment to start?

a. Methylphenidate
b. Guanfacine
c. Mixed amphetamine salts
d. **Parent training in behavioral management**

4. What would be the first line treatment for a 6-year old child with autism and disruptive behaviors without significant aggression, irritability or self-injurious behaviors?

a. SSRI
b. Atypical Antipsychotic
c. Stimulant
d. **Applied Behavioral Analysis**