Autism Spectrum Disorder in School Aged Children: Assessment and Management

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Learning Objectives

- At the end of this presentation, the learner will be able to
  - Use DSM-5 criteria to identify children with possible ASD
  - Distinguish ASD from other related conditions
  - Identify potential comorbidities in youth with ASD
  - Identify evidenced based treatments for ASD

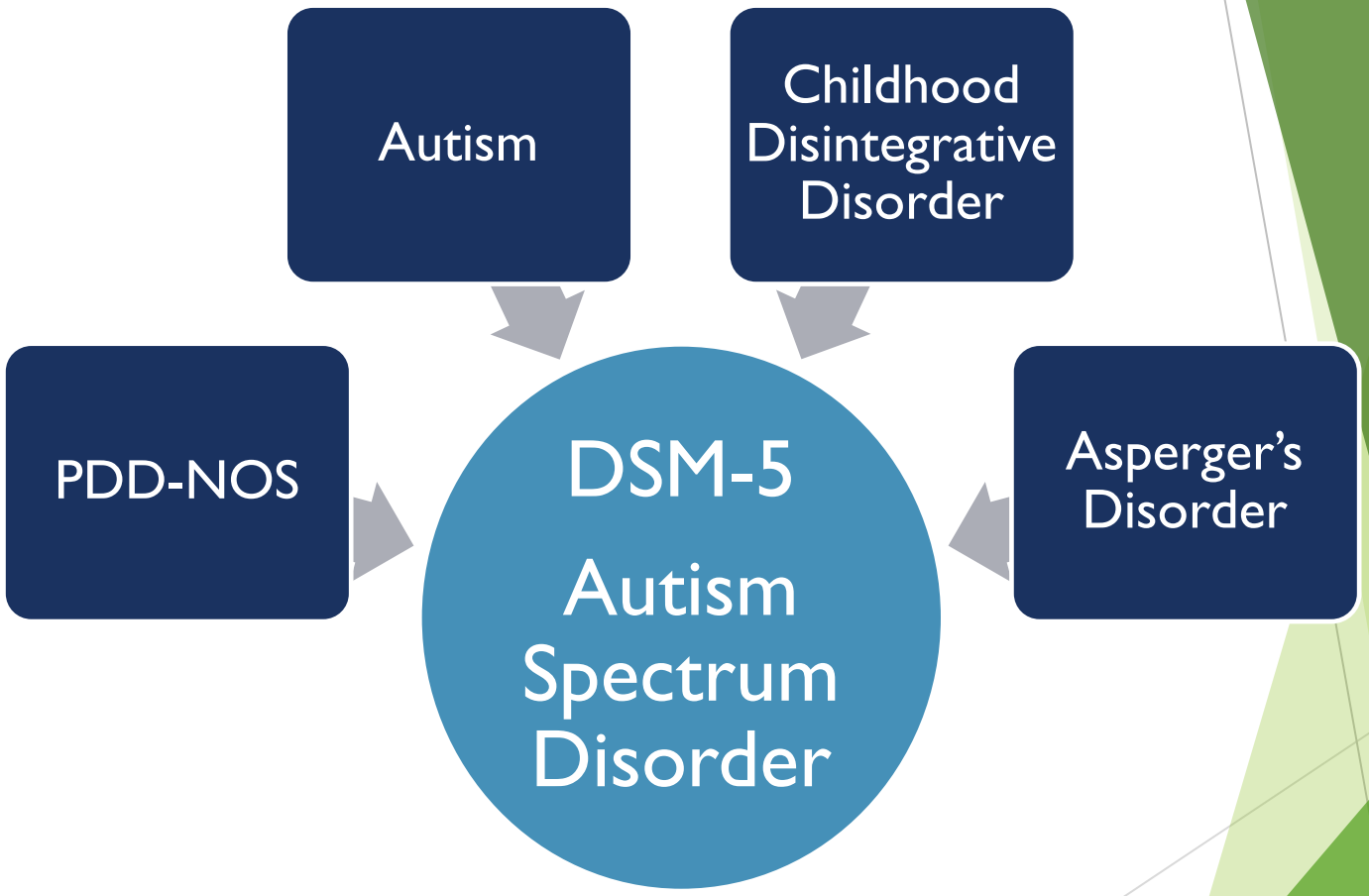
ASD Identification

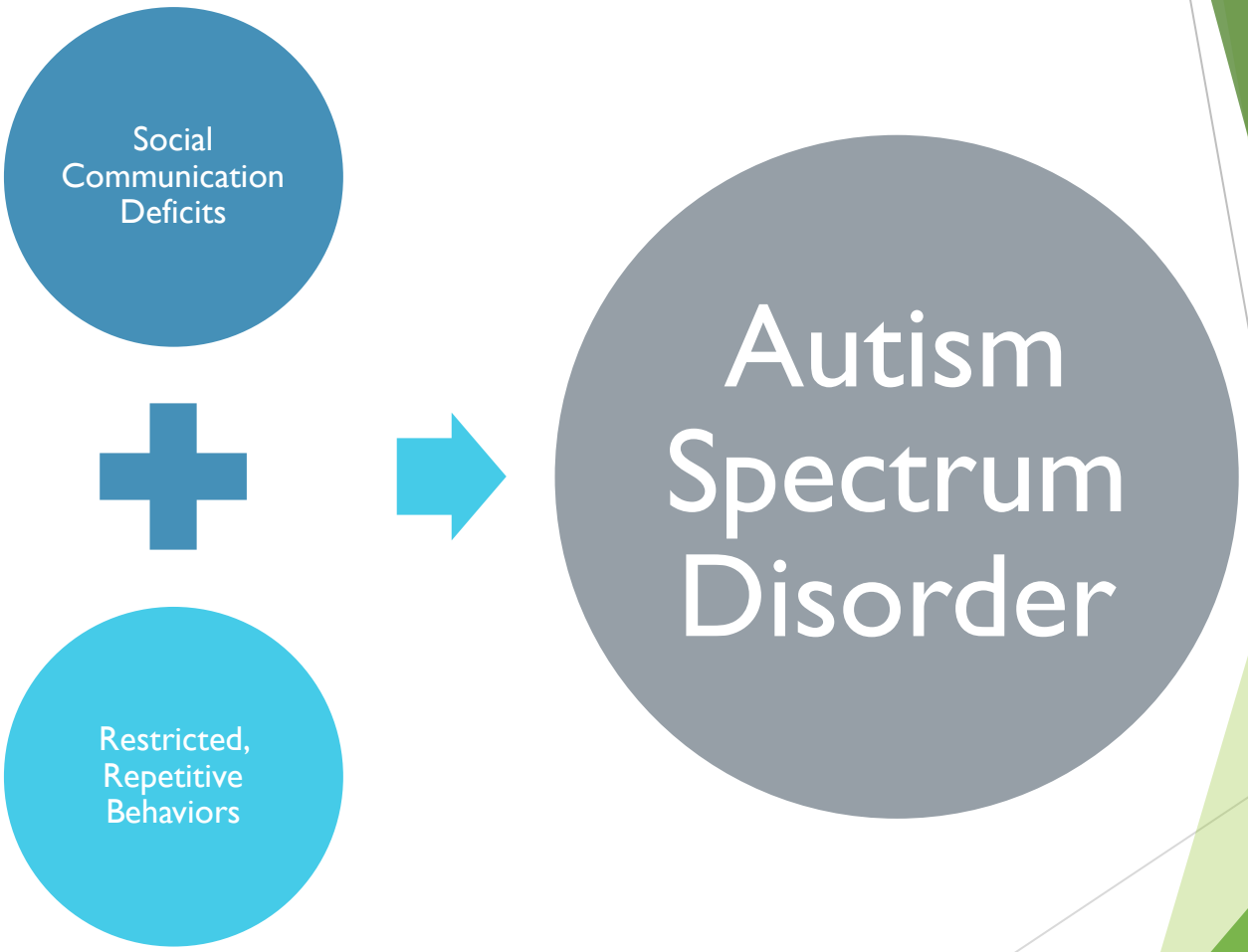
Person First Language?

- Individual with ASD: Person first language emphasizes the value of the person
  - Often preferred by parents
  - Similar to other disease models (cancer)

- ASD individual: Identity first language recognizes ASD as an integral party of the person's identity
  - Often preferred by self-advocates
  - "These are not qualities or conditions that I have. They are part of who I am. Being Autistic does not subtract from my value, worth, and dignity as a person. Being Autistic does not diminish the other aspects of my identity. "[1]

Source: 1. https://www.autistichoya.com/2011/11/identity-and-hypocrisy-second-argument.html.


Autism
Childhood Disintegrative Disorder
PDD-NOS
DSM-5
Autism Spectrum Disorder
Asperger's Disorder

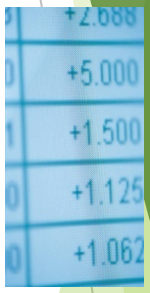

Social Communication Deficits
Restricted, Repetitive Behaviors
Autism Spectrum Disorder

ASD is a Syndrome[1]

- [1]A collection of symptoms that tend to occur together, typically without known cause

Observations of multiple patients

Statistical analyses of large databases



[1]A collection of symptoms that tend to occur together, typically without known cause.

ASD Exists on a Continuum

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Source: 1. Wing & Gould, 1979.

ASD Exists on a Continuum

“Neurotypical” People Fall on a Spectrum Too

Clinical Pearl: Some children fall on the border between ASD and non-ASD (esp. those that are seen in psychiatry)

Social Communication Skills (All 3 Must be Present)

Social emotional reciprocity	• Unusual/absent social approach (hand as tool; invasive; only initiates around own needs and interests) • Unusual/absent social response (no response to name; cringes from affection)
Nonverbal communication	• Poor use of facial expressions, gestures, eye contact • Poor understanding of nonverbal communication
Social Relationships	• Prefers to play alone • Difficulty understanding social rules • Friendships tend to center on shared interests only • Preference for younger/older children

Restricted Repetitive Behaviors (2 of 4 Must Be Present)

Repetitive Behavior	• Speech (echolalia, pronoun reversal) • Motor movements (flapping, spinning, tensing) • Use of objects
Routines & Rituals	• Negative reaction to small changes • "Stickiness" – can't move from one thing to next • Insistence on following specific routines
Intense Interests	• Excessive focus on one topic (Disney, Minecraft, trains) • Unusual interests (vacuums, car models, letters)
Sensory Differences	• Negative reactions to normal stimuli/avoidance • Excessive seeking of sensory input • May affect sight, sound, touch, taste, smell, movement

Common Profiles for Later Identification (6+)

- The mildly impaired child
  - Symptoms present from early childhood but very low intensity
  - Symptoms become more obvious and interfering as social world becomes more complex
- The passive child
  - "Sweet"; no behavioral challenges; no "bell ringer" symptoms (e.g. hand flapping)
  - ASD symptoms are otherwise quite clear
- Child with severe to profound cognitive delays
- Child with significant medical complexity (or psychosocial complexity)
- The 'diagnostic whirlwind'
  - Severe behavioral challenges from an early age
  - Diagnostic overshadowing by ODD/ ADHD/OCD/Anxiety/DMDD/Tics

Late Diagnosis Challenges

- Some individuals can learn to mimic gestures and conversational style of others; ”masking”
- Diagnosis in girls
  - Core symptoms may manifest differently (e.g. obsessions with people rather than objects)
  - Assumption that girls with poor social skills are shy are “shy”
- Earlier rule-out evaluations may complicate the picture
  - Milder symptoms may not become problematic until social demands increase

Common Differential Diagnoses

- Social phobia
- Selective mutism
- ADHD/ODD
- Emerging thought disorder
- Mood disorder
- Intellectual Disability/Global Developmental Delay*
- Tourette Syndrome*
- Obsessive compulsive disorder*

Clinical Pearl: A ”textbook presentation” of one disorder does not definitively rule out ASD (high rates of

ID VS. ASD

- Compare adaptive, cognitive and motor skills to social and communication skills
  - Social communication deficits > deficits in others domains
- Cognitive mental age vs. social milestones
  - Newborn – comforted by caregiver
  - 2 months – smiles at people; pays attention to faces
  - 4 months – imitates facial expressions
  - 5 months – initiates play
  - 6 months – recognizes strangers; recognizes name; responds to emotions

Tics vs. ASD stereotypies

Feature	Tics	Stereotyped Movements
Typical Onset	5-7	<2
Common Movements	Blinking, grimacing, jerking	Waving, jiggling or posturing of hands and fingers
Rhythm	Quick, sudden, aimless	Rhythmic
Duration	Intermittent, short, abrupt	Intermittent, repeated, prolonged
Premonitory Urge	Yes	No
Response to Treatment	Positive with neuroleptics and others; Habit reversal	Limited response to medication or behavior therapy
Reaction	Often accompanied by distress or discomfort	Often appears enjoyable

Source: Barry S, Baird G, Lascelles K, Bunton P, Hedderly T, 2011.

OCD vs. ASD

	OCD	ASD
Common obsessions[1]	Aggression, sex, symmetry, **somatic**[2]	Hoarding, need to know/topics
Emotional Response to obsessions	Discomfort (intrusive, unwelcome)	Not bothered; often enjoyable
Common compulsions[1]	Cleaning, checking, counting, **repeating**[2]	Repeat, order, hoard, touch
Emotional Response to compulsions	Engages in behavior to avoid anxiety	Finds pleasure in behavior
Social deficits	Mild (subclinical ASD common)	Significant

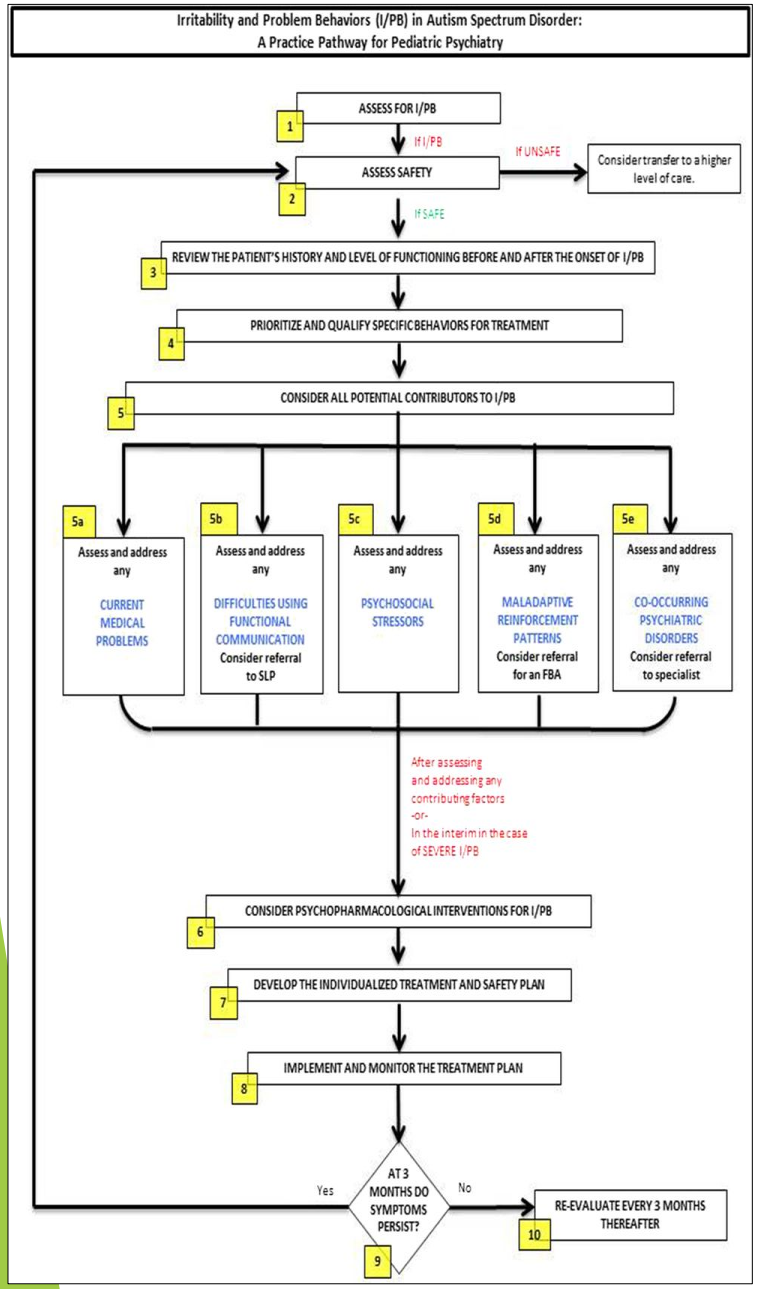
Source: 1. McDougle et al., 1995 2. Russell et al., 2006.

High Risk for Comorbidities (*69%-79% Lifetime Risk of at Least One*)

- Irritability, tantrums, self injury (85%)
- Sleep disorders (50%-80%)
- Mood disorders
- Anxiety (14%-55%)
- Suicidal behavior
- Feeding disorders
- ADHD (37%-40%)
- Seizures (7%-10%)
- Intellectual Disability (31%)
- Learning Disabilities
- Language Disorders
- GI Disturbance
- Tics
- Catatonia (rare)
- Psychosis (rare) (1%-2%)

Source: Howes et al., 2018; Houghton, Ong, Bolognani (2017).

Systematic Approach to Psychiatric Assessment



I/PB in ASD: A practice pathway for pediatric psychiatry

Kelly McGuire et al. Pediatrics 2016;137:S136-S148

PEDIATRICS®

Crisis Management

- Crisis begins at first sign of escalation (clearly defined)
- Consider whether parent needs individual therapy focusing on remaining calm in a crisis
- What to expect in ED
- Crisis management plan at home
  - Posted plan
  - Posted information for first responders
- Crisis management plan in the community
  - Handicap parking pass
  - Emergency supply of food, drink, change of clothing, calming items
  - Information cards for bystanders and/or first responders (many copies!)

Assessment

- History and onset of behavior? Sudden?
- When and where does the behavior happen? When does it not happen?
- Systematic assessment to determine tx targets
  - Parent
  - Teachers
  - Self?
  - Vanderbilt ADHD Scales (free)
  - Behavior Assessment System for Children, 3rd ed. (BASC-3)
  - Child Behavior Checklist (CBCL)

Address Current Medical Problems First!

- Pain (ear infection? headache?)
- Seizures
- Chronic issues such as allergies, constipation, GERD, etc.
- Routine dental care
- Vision/hearing
- Adolescent girls: menstrual discomfort and PMS symptoms
- Evaluate/manage sleep issues

Source: Autism Speaks Challenging Behaviors Toolkit, 2018.

Evaluation of Disruptive Behaviors

- Functional communication concerns
- Current psychosocial stressors (esp. change)
  - Maltreatment?
- Situational demands and reinforcement patterns
  - When and where is the behavior most and least likely?
  - What usually happens after the behavior?
- Setting Events
  - Hunger? Task demands outside skill level? Fatigue?
- Comorbidities
  - Anxiety, Depression, ADHD, OCD

Source: Kelly McGuire et al. Pediatrics 2016;137:S136-S148.

Pharmacotherapy

Psychotropic Medication Use

- Almost 50% of children with ASD* prescribed psychotropics in a given year (vs. 7.7% in general peds population)

Source: Madden et. al, 2017.
*n=7901

Psychotropic Medication Use

- Almost 50% of children with ASD* prescribed psychotropics in a given year (vs. 7.7% in general peds population)
  - 30.2% ADHD medications (2/3 stimulants)
  - 20.5% antipsychotics
  - 17.8% antidepressants
  - 10% mood stabilizers (primarily anticonvulsants)
  - 4% benzodiazepines
  - 3% anti-anxiety
  - 0.2% hypnotics

Source: Madden et. al, 2017.
*n=7901

Psychopharmacology

- No treatment for core ASD symptoms
  - Several in early stages of testing
- FDA approval for irritability: Risperidone (2006) & Aripiprazole (2009)
  - Dopamine receptor blockers may also decrease lethargy, social withdrawal, hyperactivity, stereotyped movements, and obsessive behaviors

Evidence for Other Medication Classes

Class	Evidence
SSRIs	Mixed evidence for reducing repetitive behaviors (very limited success in children) No support for treating anxiety or OCD Widely prescribed for depression in ASD but no rigorous trials
Methylphenidate	Clearly effective for ADHD BUT perhaps less so (and with greater side effects) than in children without ASD
Atomoxetine	Similar effect sizes to methylphenidate for hyperactivity
Alpha-2 A Receptor Agonists (Clonidine, Guanfacine)	Similar effect sizes to methylphenidate for hyperactivity
Melatonin	Improved sleep duration and onset Little impact on middle of the night/early morning awakenings Improved efficacy with addition of CBT

British Association for Psychopharmacology Consensus Recommendations

Symptom	Approach
Mood Disorders	SSRIs
Anxiety	1) SSRI; 2) Risperidone
Sleep	Melatonin with behavioral intervention
Irritability	1) Behavioral intervention; 2) risperidone or aripiprazole
ADHD	1) Methylphenidate; 2) atomoxetine or alpha-2A receptor agonist

Source: Howes et al., 2019.

Up and Coming?

- Some positive data
  - Atypical antipsychotics
  - Oxytocin
  - Several companies have drugs for core symptoms in various stages of clinical trials (e.g. Roche)
- Not looking good
  - Arbaclofen
  - Amantadine

Evidenced-based Treatments (Non-pharmacological)

Established Treatments (Non-Pharmacological)

- Behavioral Interventions
- Comprehensive Behavioral Treatment for Young Children*
- Cognitive behavioral intervention package*
- Language Training (production)
- Joint Attention Training*
- Modeling
- Naturalistic Teaching Strategies
- Parent Training*
- Peer Training
- Pivotal Response Treatment
- Scripting
- Schedules
- Self-management
- Social Skills*
- Story-based Intervention

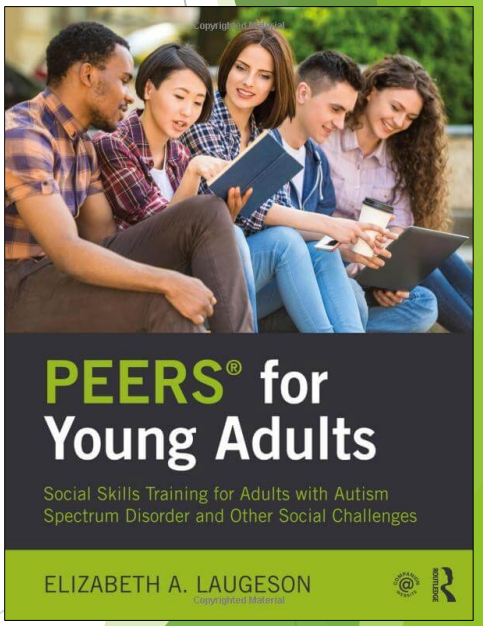
Source: National Autism Center. (2015). *Findings and conclusions: National standards project, phase 2 * Also designated by Agency for Research in Healthcare (AHRQ) 2014;*

Cognitive Behavior Therapy (CBT)

- Overwhelming support for treatment of anxiety
  - Can also help depression, stress, anger, aggression, social skills deficits
- Children with average IQ/language
- Concrete behavioral strategies
- Challenging irrational beliefs
  - "I can't control my own behavior"
- Work with the family is essential

Social Skills Interventions

- Short-term social gains in some children/adolescents
- But…limited generalization of isolated skill approaches
- Work best when the participant is motivated to learn and change
- UCLA PEERS*
  - 16 week programs for adolescents, young adults and preschoolers
  - Includes parent/partner and child sessions
  - Teaches concrete skills
    - Handling bullying, arranging get togethers, reading social cues, etc.



*Program for the Education and Enrichment of Relational Skills.

Behavioral Interventions

- Over 450 studies to support effectiveness
  - Joint Attention Intervention
  - Chaining
  - Differential Observing Response (DOR)
  - Forward Chaining
  - Function-based Intervention
  - Imitation Training
  - Reinforcement Schedule
  - Response Interruption and Redirection
  - Repeated Practice
  - Standard Echoic Training

Behavioral Interventions

- Can improve skills
  (social skills, language, motor, academic, self-help)
  - E.g. Premack principle or “grandma’s law”

- Can decrease problem behaviors
  (self injury, aggression, tantrums)
  - E.g. Functional Behavior Assessment

Functional Behavioral Assessment (FBA)*

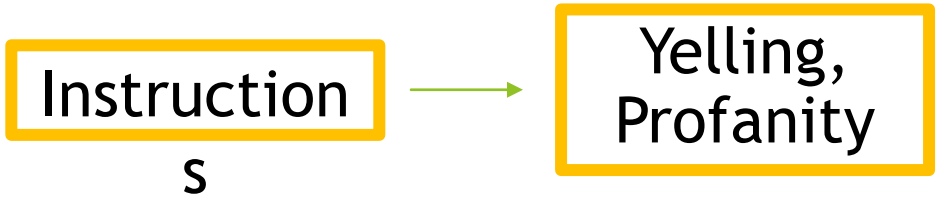
- Assumes that behavior happens for a reason
  - Behaviors occur in response to an event (the antecedent)
  - Behaviors are a form of communication
  - Behaviors are made more or less likely by the response (the consequence)
  - Behaviors are made more or less likely by the context (hunger, change, signs)
- Take data to determine when and why a behavior is happening
  - Escape/avoidance of task demands?
  - Attention?
  - Automatic? Sensory seeking?

*Required in some cases by IDEA law.

Behavior Intervention Plan

Yelling,
Profanity

Behavior Intervention Plan



Behavior Intervention Plan

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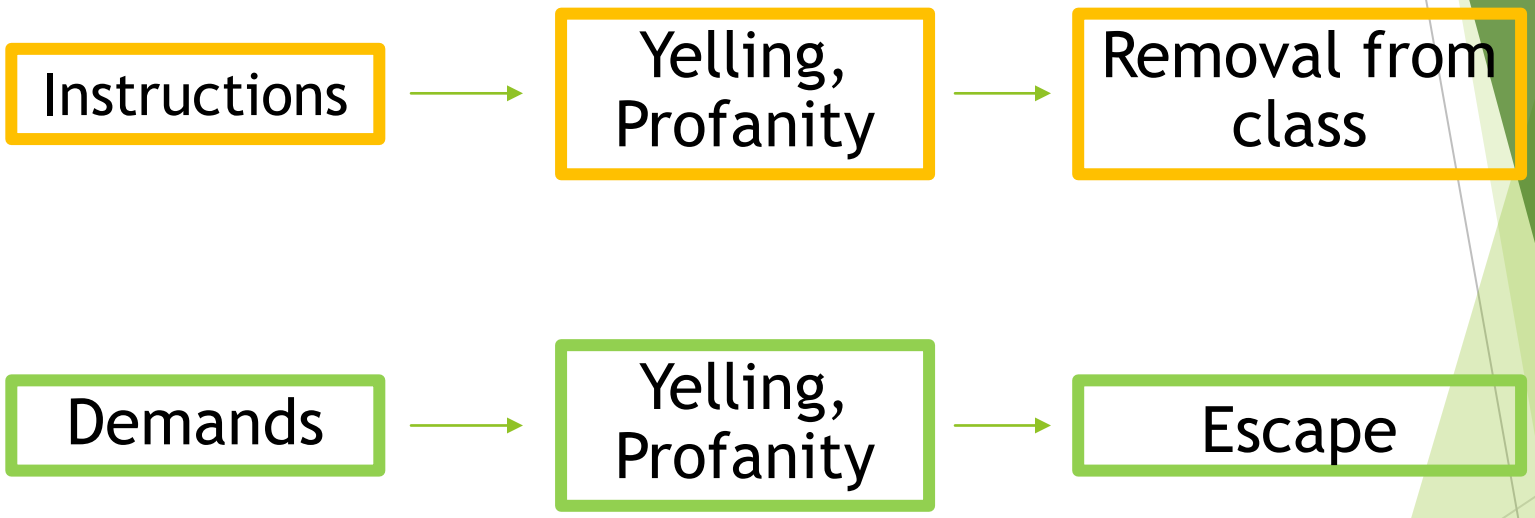

Behavior Intervention Plan

- Developed based on results of the FBA

- Logical BIP
  - Modify difficulty/intensity of demands
  - Visually pair demands with preferred tasks (task board; timer)
  - Teach break requests
  - Teach to make requests for help

*Required in some cases by IDEA law.

Complementary and Alternative Medicine

Slides (56-

Complementary Alternative Treatments

- Elimination diets (Gluten-free Casein-free, sugar free, removal of dyes/artificial ingredients)
- Probiotics
- Medical marijuana**
- CBD oil
- Dietary supplements

- Acupuncture
- Yoga
- Pet therapy
- Chiropractic care
- Hyperbaric oxygen treatments
- Chelation

**studies

Recent Reviews

- Some emerging evidence for
  - Music therapy
  - Sensory integration therapy
  - Acupuncture
  - Massage
- Little evidence for other CAM interventions

Source: Brondino et. al, 2015. Weilauf et. al, 2017.

Working with Families

- 28% of families use CAM treatments at any given time
- CAM usage most common among Caucasian, high SES families
- Remember to ask
  - Patients report not telling their doctors about CAM treatments
  - Trust is essential – don't punish honesty
- Anecdotes are more salient than "research"

“It Can’t Hurt”

- Financial cost
- Time/energy/money diverted from other treatments
- Elimination diets can be particularly problematic difficult already restrictive eaters
- Rarely, CAM interventions can be dangerous (e.g. chelation, supplements of unknown origins, etc.)

Teach Families to Conduct Their Own N=1 Studies

- Change 1 factor at a time
- Take objective data before, during and after
  - Keep it simple!
- Consider having a blind rater if feasible/safe
- Commit to evaluation after a certain time period

Q & A

Recent Reviews of Evidence

- *Comparative Effectiveness of Therapies for Children With Autism Spectrum Disorders*, CER No. 26, prepared under Contract No. 290-2007-10065-I, April 2011.
- *Therapies for Children with Autism Spectrum Disorder: Behavioral Interventions Update*, CER No. 137, prepared under Contract No. 290-2012-00009-I, August 2014.
- National Autism Center. (2015). *Findings and conclusions: National standards project, phase 2*.
- Weitlauf AS, Sathe NA, McPheeters ML, Warren Z. *Interventions Targeting Sensory Challenges in Children With Autism Spectrum Disorder—An Update*. Comparative Effectiveness Review No. 186. AHRQ Publication No. 17-EHC004-EF. Rockville, MD: Agency for Healthcare Research and Quality; May 2017.
- Brondino, Natascia et al. "Complementary and Alternative Therapies for Autism Spectrum Disorder." *Evidence-based Complementary and Alternative Medicine : eCAM* 2015 (2015): 258589. *PMC*. Web. 9 Sept. 2018.
- Weitlauf AS, Sathe NA, McPheeters ML, Warren Z. (2017). *Interventions Targeting Sensory Challenges in Children With Autism Spectrum Disorder—An Update*. Comparative Effectiveness Review No. 186.
- Howes, O. D., Rogdaki, M., Findon, J. L., Wichers, R. H., Charman, T., King, B. H., … Murphy, D. G. (2018). *Autism spectrum disorder: Consensus guidelines on assessment, treatment and research from the British Association for Psychopharmacology*. *Journal of Psychopharmacology, 32*(1), 3–29. https://doi.org/10.1177/0269881117741766.