

- 3. Sensory Modulation Disorders-Difficulty regulating sensory registration to respond to functionally important environmental information and screen out functionally irrelevant input. 2-5 year olds with PDD had significantly greater hyper-reactivity, hypo-reactivity, and self-regulation difficulties (Ben-Sasson et al., 2007; Silva & Schalock, 2011). Assessed by Sensory Processing Measure: Preschool (2-5 yrs.), Home or Classroom (5-12 years) or Sensory Profile.**
 - a. Sensory Overresponsivity- Sensory Sensitive/Hyper-reactivity) react more to sensory, slow neurological habituation; seen in over half of youth with Autism Spectrum Disorders**
 - b. Sensory Underresponsivity- (Low Registration/Hypo-reactivity) do not notice sensory input, habituate quickly**
 - c. Sensory Seeking- actively seek out sensory input**
 - d. Sensory Avoiding- actively avoid sensory input**

(Watling et al., 2011; Schaaf & Mailloux, 2015)

PROGRESSIVE SENSORY-BASED INTERVENTION

BLOG SUPP SLIDES P. 2

1st Sensory Modulation Disorder

Low Registration

Sensory Seeking

Sensory Sensitive

Sensory Avoiding

Gravitational Insecurity

Tactile Defensiveness

3rd Sensory Based Motor Disorder

Praxis

Postural Disorder

Ideation

Motor Planning

Execution

2nd Sensory Discrimination Disorder

Interoception

Pain

Hunger

Thirst

Vestibular

Proprioception

Tactile Discrimination Disorder

Gustatory

Olfactory

Visual

Auditory

Copyright © 2016 by John Pagano, Ph.D., OTR/L www.fabstrategies.org

References: (Miller et. al., 2007; Schaaf & Mailloux, 2015)

SBI (Sensory-Based Interventions)

© Copyright 2017 by John Pagano, Ph.D., OTR/L **BLOG SUPP SLIDES P. 3**

- SBIs are the guided use of individualized sensory strategies to improve behavior by addressing sensory modulation and sensory discrimination challenges (Watling et al., 2011)
- SBIs included to evidence-based school PBIS, Floortime Approach for ASD (Hess, 2013), Collaborative Problem Solving for ODD (Pollastri et al., 2013), & SMART approach for PTSD (Warner et al., 2014)
- Using visual supports as needed in teaching students with ASD and other developmental disabilities individualized coping strategies (e.g., improve social skills, energy level modulate, slower pace, environmental adaptations reducing visual, auditory & tactile distractions, increasing salience of teaching prompts, visual supports) to help improve self-control (Ashburner et al., 2008; Kinnealey et al., 2012; Green et al., 2015; Murray et al., 2009; Soh et al., 2015)
- Massage (15 minutes twice weekly for 2 months minimum) is the strongest evidence-based SBI for improving student behavior & learning (Yunus et al., 2015)

WHERE should school therapists TREAT?

BLOG SUPP SLIDES P. 4

Individual Therapy

Tier 3: Tertiary Interventions & Supports

- Specialized Individualized Systems for Students with High-Risk Behavior
- Reduce severity of current cases

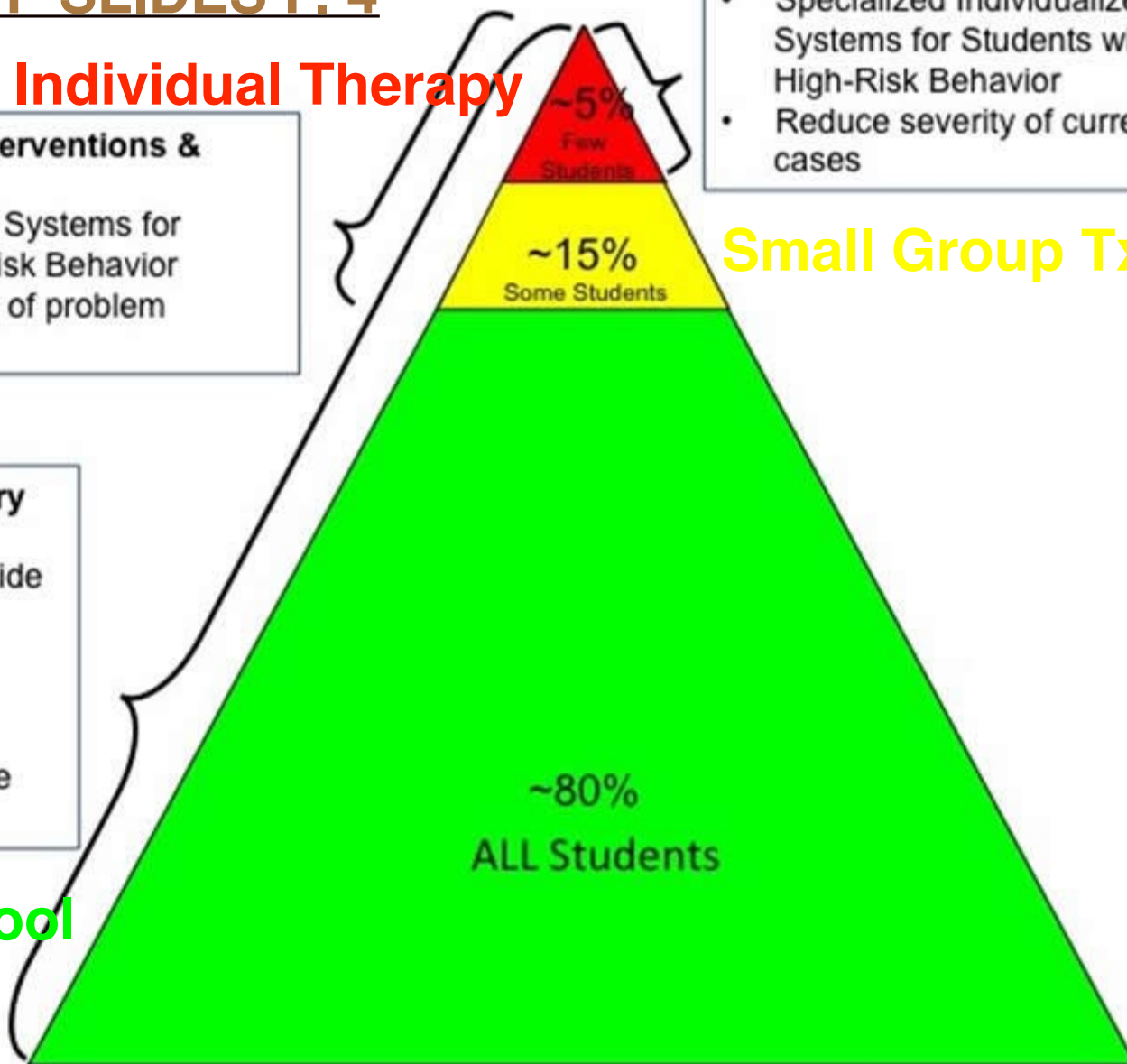
Small Group Tx

Tier 2: Secondary Interventions & Supports:

- Specialized Group Systems for Students with At-Risk Behavior
- Prevent worsening of problem behaviors

Tier 1 (Universal) Primary Prevention:

- School/Classroom-Wide Systems
- All Students, Staff, & Settings
- Reduce problem behavior and increase instructional time



Classroom/School

SBI's Integrating Mindfulness, Music, Movement, Exercise, Adaptive Equipment & Massage

BLOG SUPP SLIDES P. 5

© Copyright 2016 by John Pagano, Ph.D., OTR/L

- Develop preferred, goal-directed, individualized coping strategies
- Mindfulness, music, movement, exercise, adaptive equipment, self-touch, equipment touch, & massage can address common goals
- Combine movement, massage, & occupational tasks
- Goals of modulating arousal, improving body awareness, and increasing attention
- Independent, group, & one-to-one intervention
- Include regular long-term & crisis strategies

Integrating Behavioral With Sensory Tx

www.fabstrategies.org **BLOG SUPP SLIDES P. 6**

© Copyright 2016 by John Pagano, Ph.D., OTR/L

- ★ *Sensory input as Reinforcement-*
- ★ *Deep pressure mat sandwich functioned as reinforcement of behaviors that immediately followed it for ASD students (McGinnis et al., 2013)*
- ★ *Sensory match for problematic self-stimulation-*
- ★ *Non-contingent reinforcement NCR (Machalicek et al., 2007; Mays et al., 2011; VanRie et al., 2010) with matched sensory stimulation and reinforcing progressively longer periods with out self-stimulation (Richman, 2008) for automatic reinforcement reduces problematic self-stimulation for improved school learning in children with Autism Spectrum Disorders (Murray et al., 2009).*

Best Clinical Resources P. 6 Supplement

P. 6B fabstrategies.org

pinterest.com/FABStrategies

- Autism Visuals visuals.autism.net
- Behavioral Strategies (feeling wheel, Tucker Turtle) www.challengingbehavior.org
- Brown, R. P. & Gerbarg, P. L. (2012). The healing power of breath. Boston, MA: Shambhala. www.breath-body-mind.com
- Committee for Children. (2009). www.cfchildren.org Second Step PBS
- DECA Assessment & PBS www.devereuxearlychildhood.org
- Dunn, W. Sensory Profile www.sensoryprofile.com
- Field, T. Touch Research Institute www6.miami.edu/touch-research
- Green, S. A., Hernandez, L., Tottenham, N., Krasileva, K., Bookheimer, S. Y., & Dapretto, M. (2015). Neurobiology of sensory overresponsivity in youth with autism spectrum disorders. *JAMA psychiatry*, 72(8), 778-786.
- Greenland, S.K. (2010). *The Mindful Child*. New York, NY: Free Press. <http://susankaisergreenland.com>.
- Kazdin, A.E. (2008). *The Kazdin Method for parenting the defiant child*. NY, NY: Mariner Books.
- Koester, C. (2012) *Movement Based Learning. Braingym for special education*. www.movementbasedlearning.com
- Laugeson, E. A. (2014). *The PEERS curriculum*. www.semel.ucla.edu/peers
- PATHS PBS Curriculum. www.pathseducation.com
- Positive Behavioral Support Help www.pbisworld.com
- Silva et al. (2009). QST program Sensory Massage. www.qsti.org
- Schaaf, R. C. & Mailloux, Z. (2015). *Clinician's guide for implementing Ayres Sensory Integration: promoting participation for children with autism*. Bethesda, MD: AOTA Press.
- Stahmer & Suhrheinrich, 2011. *Classroom Pivotal Response Teaching*. NY, NY: Guilford Press.
- Valkanos, C., Huber-Lee, C., & Cahill, S. M. (2016). Teaching self-regulation skills to first graders. *OT Practice*.
- Wan-Yunus, F. W., Liu, K. P., Bissett, M., & Penkala, S. (2015). Sensory-based intervention for children with behavioral problems: a systematic review. *Journal of autism and developmental disorders*, 45(11), 3565-3579.
- Watling, R., Davies, P. L., Koenig, K. P., & Schaaf, R. C. (2011). Occupational therapy practice guidelines for children and adolescents with challenges in sensory processing and sensory integration. American Occupational Therapy Association.