Mindfulness, Proprioception & Interoceptive Strategies for School Therapy P. 1

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Sensory Integration/Sensory Processing Intervention developed by Ayres for Behavior

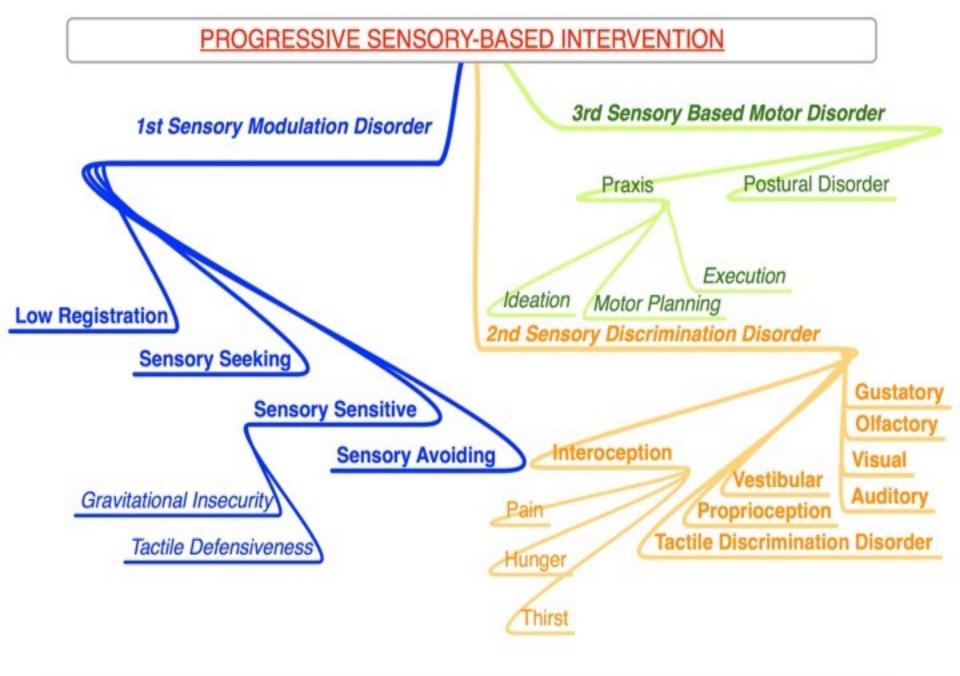
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Coaching based on Dunn Model

Coaching using family/student on dealing with their specific functional sensory challenges (Pashadazeh et al., 2019)

SBI (Sensory-Based Interventions)

Individualized sensory strategies and adaptive equipment to specifically improve sensory modulation and/or sensory discrimination skills for behavior and learning (Wong, 2023)



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If significantly Hypo and/or Hyper-responsive, decrease then gradually increase sensory input as needed to achieve a Calm Alert State.

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HYPO-RESPONSIVE

Low Registration



Calm

Alert

State

HYPER-RESPONSIVE

Sensory Sensitive



Self-Squeezing, Body Scan & Kindness P. 2

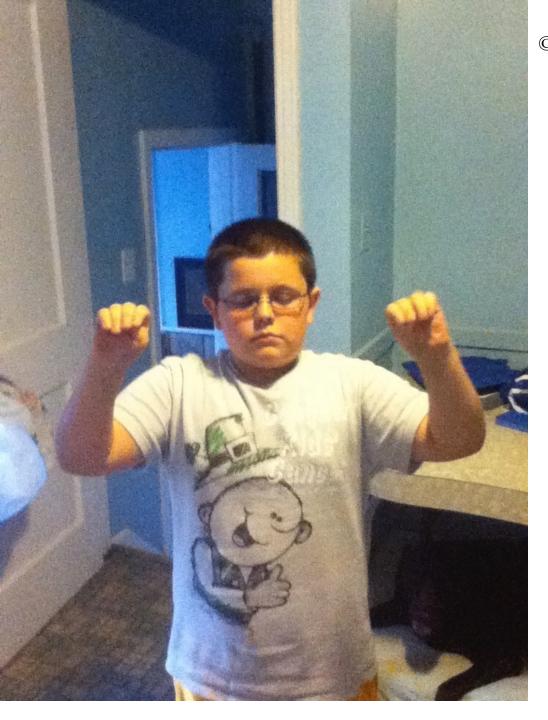
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- Self-Squeezing- Shoulder-Arm-Hand-Fingers. Crossing arms hug or squeeze both shoulders diagonally in for 10 sec. then squeeze, press or massage sequentially down the back of the arm. Pick as side and do shoulder, upper arm, lower arm, then thumb, pointer, middle, index, little finger (Brown & Gerbarg, 2022)
- Butterfly body scan- Butterfly sequentially lands flowing out white relaxing and energizing light. Head, shoulders, knees feet
- **Kindness-** Unconditionally love & adore; Self; Group; Acquaintance. *May they be happy, healthy, safe, at peace.*

Mindfulness to Decrease Arousal Level P. 3

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- "Paint the waterfall"/"Fingerpaint the easel"- breathing in back of hands move up; breathing out palms move down
- Rub hands together- press
- Energy Ball- breathing in separate hands gathering energy, breathing out move hands in energy into a golden ball
- HAND BREATHING-"Open your hands" then "Close your hands" quickly on command
- **Open your hands** while breathing in stomach goes out while fingers separate and extend fully;
- Close your hands while breathing out even more slowly stomach goes in fist over pointer & index finger (Mushti Mudra decreasing rage; spiritual fetal position)



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Hand Breathing and

Developmental Coping

Strategies- Easy enough that
they can do it, hard enough that
they can't think of anything else

Mindfulness Sensory Strategies in School OT P. 4 © Copyright 2024 by John Pagano, Ph.D., OTR/L

- * Slow breathing mindfulness activities significantly reduced anxiety, depression and trauma symptoms in children, as well as adults with psychosis, PTSD and mental health challenges (Brown & Gerbarg, 2022; Potes et al., 2018)
- * Mindfulness training significantly decreased bullying behavior difficulties in elementary school students (Faraji et al., 2019)
- * Feel your feet significantly improved behavior in adolescents with aggressive behaviors (Singh et al., 2016)
- * Sensory coping strategies that improve anxiety and depression through neurotransmitter affects can include mindfulness, deep breathing, sensory strategies, massage, and adaptive equipment (Prat, 2022)

Proprioception Sensory Treatment P. 5

- © Copyright 2024 by John Pagano, Ph.D., OTR/L
 Proprioception- Primarily unconscious sense of body position and movement through receptors in muscles (muscle spindle fibers), joints (Golgi tendon organs) and vestibular "movement sensors" (Tuthill & Azim, 2018). Proprioception helps with body position and alerting for attention and learning (STAR Institute, 2024 <sensoryhealth.org>).
- Intervention- Assess specifically if makes a student more functional. Push-ups, wall pushups, pushing in swing (modulating vestibular), carrying books, theraband exercises, crash mats, mat sandwich, brushing, roll therapy ball over (STAR Institute, 2024)
- Deep pressure touch & shoulder squeeze significantly improved school mood and participation in students with intellictural and ASD challenges (Bestbier & Williams, 2017).
- Sensory Based Interventions (SBIs) are assessment based individualized sensory activities and environmental adaptations that improve behavior and learning. Helpful in students with ASD integrated into the class routine (Wong, 2023). SBIs components that are not full Sensory Processing are components of Somatic Psychotherapy, PBIS (School Positive Behavioral Interventions & Supports (e,g, Second step, DECA, PATHS), SMART ARC PTSD treatment programs (Warner et al., 2014).

Natural occupations best strategies for integrating Vestibular, Proprioception & Tactile Sensory

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Sensory Based Interventions

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(Blaustein & Kinniburgh, 2019)



A sensory based intervention can involve a requested break involving linear movement combined with proprioception through deep pressure pushes and the cuddle swing

FAB STRATEGIES®

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"FUNCTIONALLY ALERT BEHAVIOR" Curriculum guiding individualized clinical reasoning addressing behavioral goals:

- A. ENVIRONMENTAL ADAPTATIONS
- **B. SENSORY MODULATION**
- C. POSITIVE BEHAVIOR SUPPORT
- D. PHYSICAL SELF-REGULATION

Develop individualized intervention by integrating the research evidence, client/family values, environmental context, benefit, and risks (Ashburner et al., 2014)

FAB Strategies® for Learning Readiness Form

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X-Therapist √-Staff & family A-Attachment Circle-Equipment given

Client:	Teacher/Therapist:	Contact:
Functional Goals:		Dates:
Dates/Baselines:		
	TAL ADAPTATION	1 . C . C . B . B .
	ansitions/Low noise/Headphones/Fi	
		d-Disc O Sit/Clip-Slant board-Pencil grip ing-Pace/Sensory coping Area-Room
Choice of 1 activ	ity from 1 2 3 4 choices; do sec.	/minutes minimum; clean up before next acti
B. SENSORY MOD	ULATION	
		indful clock Sitting-Standing/Feel your feet
Slow breathing: I Self-squeezing: S Arousal level-Mo	Hand-Finger paint-Trace fingers-Sq houlder-Arm-Fingers/Shaking/Kind	ueeze fingers-Circles-Infinity-Energy ball-He ncss/4-2-4-2-Movement/4-4-6-2-Movement eeze dance/Giant steps/Simon says/10 hotdog
Sequential touch:	Beans-Rice-Theraplast-Playdoh-Sa	nd-Wiki stix-Water-Floof-Glue-Shaving crea ack X/Spine Crawl/Light, slow letters on b
		l: Core-Slow breathing/Back tech: Tap-Pres
	elf-Buzzing/Chewey/Vest: Pressure	
	Cherry, Coll 17 Call	The same of the sa
C. POSITIVE BEH	AVIOR SUPPORT	
Ask permission to	o Kid-Touch/Prompt head filter/Invi	te/Still like you/Facing door/Grounding
		ing/Desensitization/Practice saying/Redirect
Pre-correction/Se	lf-management/Tolerance for delay	Coping card/FAB turtle/Humor/Partial senter work/Intersperse learned tasks/Priming/Promp
		ngible-Desensitization-Self-management
D. PHYSICAL SEL	F-REGULATION	
		-up/Treadmill/Weight lift/Punch heavy bag
		k-Flv/Playground-Structure/Quadruped pass
		Beanbag pass/Mini-trampoline jumping
	ting/Drawing/Bilateral integration	
	therapy ball: Forward & back-Up	& down-Sides-Mindful clock
		uspended Swing: Forward & Back-Lateral-
Activities:	and the second second	
Activities:		
Activities:		

Interoception P. 6

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- Interoceptive Awareness (IA) is the ability to sense & represent our internal body state and functional skills, moderately correlates with Sensory Processing, and affects functioning e.g., "I stay away from activities where I think I could get hurt" (Brown & Dunn, 2023)
- IA & body awareness provides the foundation for our emotions and self-regulation, but is significantly worse in psychiatric and developmental disorders. (DuBois et al., 2016; Price et al., 2023)
- IA treatment enhances interoceptive awareness, improves insula functioning and decreases substance abuse & PTSD symptoms (Price et al., 2023)

BACK X & SPINE CRAWL P. 7

- X MARKS THE SPOT X slow, light, rhythmic on back WITH A DOT DOT DOT 3 dots with your fist AND A LINE LINE 13 horizontal lines AND A QUESTION MARK ? on entire back "CRACK AN EGG ON YOUR HEAD Place fist on head and tap it with hand
- LET THE YOKE RUN DOWN" fingers down both sides of head simultaneously (2 X)

CREEPY CRAWLIES UP YOUR SPINE

spine crawl with index knuckles up both sides spine

CREEPY CRAWLIES DOWN

palms press slide firmly down both sides of spine

End of Webinar

Interoceptive Awareness Interventions P. 8

- © Copyright 2020 by John Pagano, Ph.D., OTR/L Interoceptive Awareness School Curriculum- Significantly increased interoceptive awareness (e.g., my muscles are tightening indicating anger so I should take a walk) in students with ASD (Mahler, 2017; Hample, 2020)
- MINDFULNESS- Slow deep breathing reduces anxiety and depression (Brown & Gerberg, 2023: Weng et al., 2021)
- Body scan procedure increased interoceptive awareness in typical adults (Fischer et al., 2017)
- Interoceptive Self-touch helps us identify, integrate, and apply internal body signals for self-regulation (Price & Hooven, 2017)
- MABT (Mindful Awareness in Body-Oriented Therapy)-Individualize preferred light touch or deep pressure touch whether applied provide distinct emotionally calming affects in the Insula (Case et al., 2021)
- Light touch- Cuddling light, slow, rhythmic touch on nonglabrous skin provides interoceptive input that appears to reduce depression and increase body awareness (Eggart et al., 2019)

Kelly-Mahler.com breath-body-mind.com cmbaware.org

Integrated Behavioral & Sensory Strategies

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- Visual list, Visual schedule, "Road map"
- Alternate seated and movement
- Alternate challenging with easy
- Organize the environment
- Scaffolded demands to shape behavior
- Redirection to minimize conflicts
- Deep pressure
- Very deep pressure to prevent aggression

Self Brushing & Buzzing P. 9

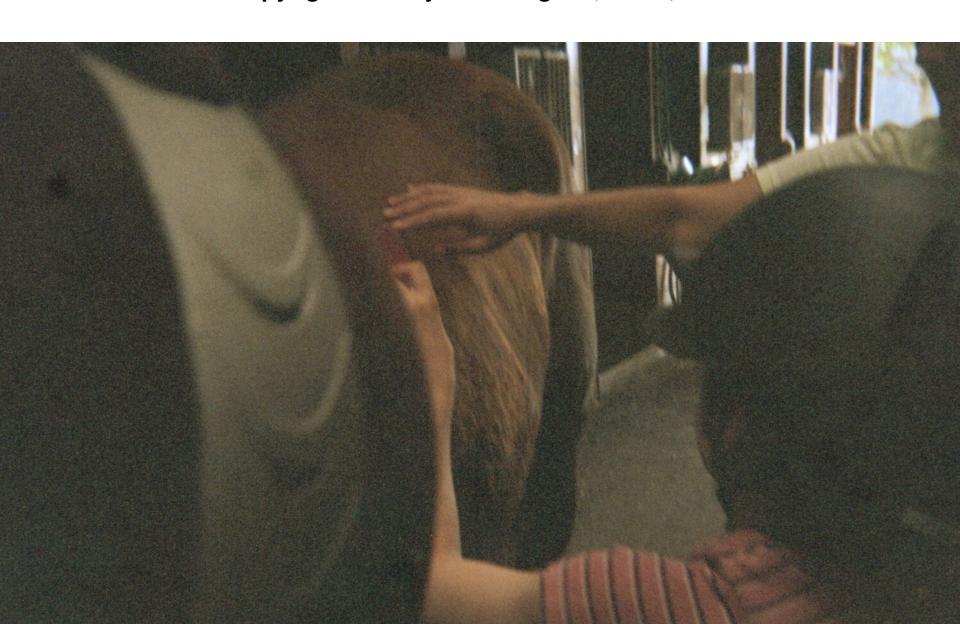
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- Self-brushing- Back of your hand from fingertips to shoulder. Teacher demonstrates on dominant arm then has students match on their nondominant hand initially. Can help decrease touch defensiveness and increase body awareness
- Self-buzzing: Vibrating bath brush from back of fingertips to shoulder; vibration can help in forming neurological map for body awareness. Can touch and have name different body areas

(Burpee, 2019; Koester, 2016)

PRESSURE TOUCH Functional Activities

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MINDFUL CLOCK SITTING P. 10

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*MINDFUL CLOCK SITTING

TIC SWAY FORWARD TOC SWAY BACK
LIKE A SWAY FORWARD CLOCK SWAY BACK
'TIL WE SWAY FORWARD FIND OUR SWAY BACK
CENTER MOVE CENTER

TIC SWAY LEFT (leader right) do a righting reaction (head and trunk flex uphill)

TOC SWAY RIGHT do a righting reaction (head and trunk flex uphill)
LIKE A (Sway Left) do a righting reaction (head and trunk flex uphill)
CLOCK (Sway Right) do a righting reaction (head and trunk flex uphill)
'Till WE (Sway Left) do a righting reaction (head and trunk flex uphill)
FIND OUR (Sway Right) do a righting reaction (head and trunk flex uphill)

CENTER (Center)

MINDFUL CLOCK STANDING P. 11

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MINDFUL CLOCK STANDING

TIC SWAY FORWARD TOC SWAY BACK
LIKE A SWAY FORWARD CLOCK SWAY BACK
'TIL WE SWAY FORWARD FIND OUR SWAY BACK
CENTER MOVE CENTER

TIC-SQUAT DOWN
TOC-STAND ON TOES
LIKE A-SQUAT DOWN
CLOCK-STAND ON TOES
'TILL WE-SQUAT DOWN
FIND OUR-STAND ON TOES
CENTER-(CENTER)

TIC SWAY LEFT "Leader right" do a righting reaction (head and trunk flex right)
TOC SWAY RIGHT do a righting reaction (head and trunk flex left)
LIKE A SWAY LEFT do a righting reaction (head and trunk flex right)
CLOCK SWAY RIGHT do a righting reaction (head and trunk flex left)
'Till WE SWAY LEFT do a righting reaction (head and trunk flex right)
FIND OUR SWAY RIGHT do a righting reaction (head and trunk flex left)
CENTER (Center)

Questions

Questions-15 minutes