

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)

PROGRESSIVE SENSORY-BASED INTERVENTION

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

**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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<p>HYPO- RESPONSIVE</p> <p>Low Registration</p> 	<p>Calm Alert State</p>	<p>HYPER- RESPONSIVE</p> <p>Sensory Sensitive</p> 
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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

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- ★ **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

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- **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 intellectual 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: _____

A. ENVIRONMENTAL ADAPTATION

Prepare-Limit-Transitions/Low noise/Headphones/Fidget-Comfort Box-Bag
Seat: Stable-Separate-Carrel-Near teacher-Therapist-Disc O Sit/Clip-Slant board-Pencil grip
Visual: List-Schedule-If then-Calm face/Slow: Speaking-Pace/Sensory coping Area-Room
Choice of 1 activity from 1 2 3 4 choices; do _____ sec./minutes minimum; clean up before next activity

B. SENSORY MODULATION

Move: Head-Shoulders-Hip circles/Tense & relax/Mindful clock Sitting-Standing/Feel your feet
Slow breathing: Hand-Finger paint-Trace fingers-Squeeze fingers-Circles-Infinity-Energy ball-Heart
Self-squeezing: Shoulder-Arm-Fingers/Shaking/Kindness/4-2-4-2-Movement/4-4-6-2-Movement
Arousal level-Modulate/Deliver: Books-Messages/Freeze dance/Giant steps/Simon says/10 hotdogs
Push button twirling bead chain/Ipad apps: Big bang patterns-Mebop maestro-ABC kids
Sequential touch: Beans-Rice-Theraplast-Playdoh-Sand-Wiki stix-Water-Floof-Glue-Shaving cream
Head crown/Shoulder: Squeeze-Press/Spine roll/Back X/Spine Crawl/Light, slow letters on back
Brush-Vibrate-Press: Back-Arms/Roll therapy ball: Core-Slow breathing/Back tech: Tap-Press
Self-Brushing/Self-Buzzing/Chewey/Vest: Pressure-Weighted/Weighted blanket

C. POSITIVE BEHAVIOR SUPPORT

Ask permission to Kid-Touch/Prompt head filter/Invite/Still like you/Facing door/Grounding
Conditioned calm/Mand-Break/Sensory match-Coaching/Desensitization/Practice saying/Redirection
Pre-correction/Self-management/Tolerance for delay/Coping card/FAB turtle/Humor/Partial sentences
Preferred: Tasks/Distractor/Choices/Pre-play before work/Intersperse learned tasks/Priming/Prompts
Reinforce: Good attempt-Appropriate-Point chart-Tangible-Desensitization-Self-management

D. PHYSICAL SELF-REGULATION

Push wall/Wall-Pushups/Exercise band activities/Pull-up/Treadmill/Weight lift/Punch heavy bag
Prone on therapy ball: Hands rock-Wheelbarrow walk-Fly/Playground-Structure/Quadruped pass
Ball: Soccer-Pass-Wall-Letter-Bat-Bounce activities/Beanbag pass/Mini-trampoline jumping
Sequential: Orienting/Drawing/Bilateral integration
Supported sit on therapy ball: Forward & back-Up & down-Sides-Mindful clock
Crash pad/Scooter board: Self-propel-Pull-Push/Suspended Swing: Forward & Back-Lateral-Spin
Activities: _____
Activities: _____
Activities: _____

www.fabstrategies.org www.phisworld.com www.spdstar.org breath-body-mind.com

Parent/guardian Signature Supporting Program: _____

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 LINE *3 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

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- **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 non-glabrous 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 non-dominant 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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(Greenland, 2015)

★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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(Greenland, 2015)

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