

REHAB SUMMIT

Session 402: Yoga, Meditation, & Mindfulness: Improve Brain & Body Balance for Children & Their Families

Betsy Shandalov, OTR/L, RYT, CYKT

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Session 402: Yoga, Meditation, & Mindfulness: Improve Brain & Body Balance for Children & Their Families

Betsy Shandalov, OTR/L, RYT, CYKT

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**Yoga, Meditation, & Mindfulness:
Improve Brain & Body Balance
for Children & Their Families**



Betsy Shandalov, OTR/L, C-IAYT
www.yogaot.com

What kind of morning did you have today?

- When you got up this am, thumbs up if you had a lot of energy and could not wait to get up. You jumped out of bed like a bunny.



- Thumbs up you wanted to put the covers back on your head and go back to sleep? You were moving like a turtle?



How do you feel now?

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Breathing Meditation

Core Breathing

- Sit comfortably, close your eyes, and notice how you are breathing. Notice the unique length of your inhale and exhale, where the breath goes in the body, whether it is quiet or audible, and whether it feels spacious or tense.
- Place both hands on your heart. In your mind's eye see yourself in a forest lit by amazing rays of sunlight. Inhale the streams of light into the crown of your head and exhale as they stream down your throat as you swallow. Inhale the light into your heart and exhale as you send loving kindness in your heart to your ribs, belly, hips and legs.
- Think of someone else that needs love and light and send your loving light-filled thoughts to them, and exhale.
- Inhale as you once again think about that beautiful light streaming from the sky and into your heart. Think about a white light encircling and protecting your heart, and smile.

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Have you ever been in a pose like this Yourself?



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What is your Self-Care?

- Start the day in a relaxing way
- Incorporate health eating and exercising
- Set boundaries and make "me" time
- Take a Tech Break
- Do something creative, and or get out in nature
- Journal about why you chose therapy in the first place as a profession
- Take time off (Personal Day, Mental Health Day)
- Use Mindfulness
- Consider Meditation (walking or seated)

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If you have a lot of energy

- Stand and shake out body parts
- "HA Breath" Bringing Sun into body (Arms in front, and then bend elbows bring energy toward you)
- "HA Breath" Bringing Sun to from above your shoulders and to your knees
- Volcano breath starting at waist, inhale and taking above head and then splitting arms as you exhale

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Teaching Body Awareness and Self-Regulation



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Yoga

- Refers to traditional physical and mental disciplines and originated in India
- Definition: Union of Body, Mind and Spirit
- Great for Kids and Adults: Nervous System Self Regulation, Cognition, Balance, Postural Control, Vestibular, Eye Tracking, Crossing Midline, Strengthening, Focus and Concentration



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8 Limbs of Yoga

- Yamas: A list of values or personal attitudes to cultivate
- Niyamas: A list of healthy and productive habits to develop
- Asanas: Yoga exercises for the body
- Pranayama: Breathing exercises to energize and calm the body
- Pratyahara: The practice of calming and stilling the senses
- Dharana: Focusing techniques to increase concentration
- Dhyana: Meditation
- Samadhi: Community



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Meditation: to engage in contemplation or reflection or to engage in mental exercise (such as concentration on one's breathing or repetition of a mantra)

- MBSR (Mindful Based Stress Reduction)
- Loving/Kindness
- Body Scan
- Breath Awareness
- Kundalini (active)
- Zen (seated, avoid thoughts without judgement)
- Transcendental (mantra)
- Depression, eating disorder, anxiety disorders

20-40 minutes for at least a week but 8 weeks saw dramatic brain differences

Anti-Aging affects: Gray matter increased with people who meditated and did yoga

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Sara Lazar functional MRI Research

- First Study: Long Term Meditators and a Control Group
 - Increased Gray Matter in Prefrontal Cortex, sensory and auditory regions and working memory and decision making (50 yr. old had Gray Matter that was equal to 25 year old)
- Second Study: People have never meditated, 8 week MBSR program
 - The primary difference, we found in the posterior cingulate, which is involved in mind wandering, and self relevance.
 - The left hippocampus, which assists in learning, cognition, memory and emotional regulation.
 - The temporoparietal junction, or TPJ, which is associated with perspective taking, empathy and compassion
 - Pons, where a lot of regulatory neurotransmitters are produced.
 - The amygdala, the fight or flight part of the brain which is important for anxiety, fear and stress in general. That area got smaller

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Meditation helps Brain

- Memory
- Awareness
- Empathy
- Stress
- Pain/Insomnia
- Interoception (represents one's body from within)
- Is active....it changes the brain
- Decrease in Amygdala(stress and anxiety)

Mindfulness

- The Quality of state of being conscious or aware of something (Oxford Dictionary)
- Mental state achieved by focusing one's awareness on the present moment, while calmly acknowledging and accepting one's feelings, thoughts and bodily sensations, used as a therapeutic technique (Oxford Dictionary)
- Whole Body Listening
- Body awareness in space

Mindfulness

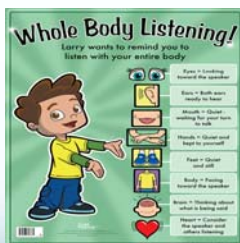
Bringing awareness to the present moment, on purpose, without judgment

Brain training / re-wiring



www.mindfulschools.org/about-mindfulness/research/

Whole Body Listening



Whole Body Listening

- "Take 5", Inhale for a count of 5 and exhale for a count of 5 together as a group
- Palming (Bringing Rain to the Brain)
- Feet on the floor, Spine in a line and heart and brain ready
- Making a Wish

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Neuroplasticity of the Brain

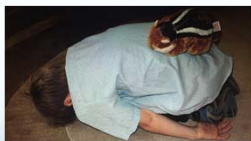
- The Brain continues to remodel itself
- Kids need specific movements to complete brain development
- We can change kids brains with motor skills with yoga, meditation and mindfulness
- We can help kids organize their brains
- Amygdala vs. Prefrontal Cortex, (Dan Siegel, explanation)
- We can enhance primitive reflexes not fully developed

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Goal: Balanced Nervous System

- Restorative Poses, Child's Pose or Turtle
- Active Poses, Rocking Horse

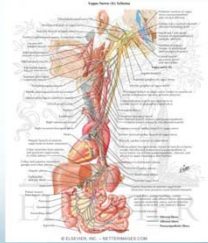


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Vagus Nerve, CN X

- Relaxation of Nervous System affects
- Heart Rate
- Lungs
- Gut



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Fruit Roll up or Enchilada, with eye pillow, Initiates the Vagus Nerve for Calm



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Neuroscience

- Well functioning brain is essential for human mental activity and behavior
- Human sleep, dream and wakefulness cycles are governed by natural neurotransmitters, they activate or inhibit the cerebral cortex and the spinal cord
- Brainstem controls heart, circulation, breathing, swallowing, eye and head movements, running and walking
- Cerebral Cortex responsible for higher function, left hemisphere, for language and right, visuospatial, auditory and attention

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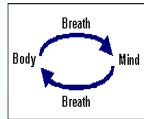
What yoga poses are best for each child

Goal is Self Regulation

Breath work (Pranayama)

Active Poses

Restorative Poses



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The 3 C's Breath (Pranayama)

- Calming "Take 5, Dandelion"
- Centering, Child's pose or (Turtle Pose) head can also be on desk
- Core (Hands at Belly), Hug Breath



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Energizing Breath

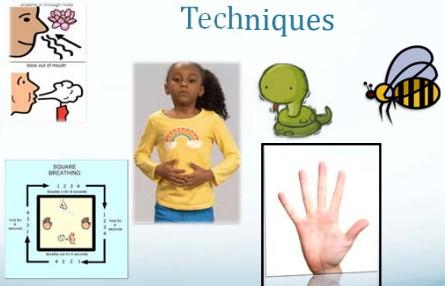
- Brhamari "Bee Breath"
- Ujjai Breath "Darth Vader"



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Breathing Techniques

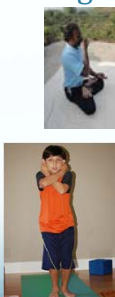


The slide features several illustrations: a diagram of nasal breathing with a flower, a diagram of mouth breathing with a candle, a 'SQUARE BREATHING' diagram with a square and arrows, a girl in a yellow shirt with hands on her chest, a green frog, a bee, and a hand with fingers spread.

Brain Balancing

- Alternate Nostril Breathing
- Super Brain Yoga

Acupressure points of Pineal and Pituitary Gland in Ear Lobes



The slide includes two photographs: one of a person in a blue shirt performing a yoga pose on the floor, and another of a person in an orange shirt performing a yoga pose standing.

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Teach Self Regulation Throughout Day

- Kids fidgeting in seat: 3-5 twists per day
- Cat/Cow "Moo Meow"
- Camel (Inhale Open, Exhale Close)



The slide includes three illustrations: a boy sitting on a chair with hands on his hips, a girl in a purple shirt performing a Cat/Cow stretch on a blue chair, and a girl in a green shirt performing a Camel stretch on a chair.

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Focus

- Mandala "Means Circle in Sanskrit (Finger tracing or coloring Exercise)
- Labyrinth
- Eye Exercises Palming First (Eyes around the clock)
- Camel (Eyes up Tongue Out)



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Focus/ Balancing

- Tree Pose
- Dancer Pose
- Stork Pose



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Poses looking at Multiple Goals

Owl Pose (Balance,
Eye, Heel Cord
lengthening,
Strengthening, twist)

Eagle Pose (Crossing
Midline/Balance ,
Focus)



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Posture and Flexibility

- Neck Stretches
- Letting Balloon Go (Side stretch)
- Camel Standing



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Posture/Strength

- Tadasana/ Mountain Pose
- Chair Pose



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Energizing Poses

- Tarzan's Thymus Tap
- Volcano
- Shake Like Jelly (standing)
- Pedal Laughing (seated)
- Reach for Sun "Make sound Ha"



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Strength and Confidence

- Warrior Series
 - Warrior 1 Strength
 - Warrior 2 Courage
 - Warrior 3 Balance
- Triangle
- Down Dog (on a chair)



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Warrior I: I am Brave



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Warrior II: I am Bold



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Warrior III: All My Power I Can Hold



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Triangle Pose

- Trace Triangles on Lying Dow (Art)
- Heart Opening (Body Benefit)
- Count Triangles (Math)
- Music (Sing I am little Teapot)



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Core Strength

- Boat Pose
- Table (Choose Food to put on it)
- Lizard



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Sensory Kids Tips for Classroom and parents

- Begin with Palming (Come into their body)
- Determine Calming Techniques/Techniques that work, Take 5, Turtle
- Baseball Cap, Hat on Head for Tunnel Vision
- Teach breathing with a flashlight, stuffed animal on belly
- Guided Imagery through Spinning Inward Book by Maureen Murdock or Meditation Apps like Insight Timer, Headspace and Calm

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Brain Highways www.brainhighways.com

- Help Educate Parents, Educators and Therapists about the way a child's brain is organized by looking at Motor Skills and Brain Behavior
- Uses Motor Skills to Evaluate Behavior
- We want to teach kids to stay in their cortex of their brain instead of their fight or flight mode
- We want them to move differently and ideally talk through it and recognize that they need to change their movement pattern.

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Students with Problems with Proprioception (Body in Space)

- Behaviors:
 - Gives Really Tight Bear Hugs
 - Frequently drops/breaks items
 - Writes too darkly or too lightly
 - Stinging high five
 - Falls out of chair regularly
 - Purposely crashes body against wall

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Motor Skill for Proprioception

- What is being assessed? (Photo Brain Highways)
 - A person's innate sense to quickly and accurately touch body parts without looking at them
- Chest
- Ankle
- Shoulder
- Elbow
- Waist
- Knee
- Wrist



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Yoga and Mindfulness with Proprioception

- Take 5
- Bee Breath
- Child's Pose (Restorative)
- Tarzan's Thymus Tap (Active)
- Lion Pose (Active)
- Mountain Pose (Active)
- Enchilada (Restorative)



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Students with Problems with Vestibular

- Rocks in chair
- Likes to spin but does not get dizzy
- Experiences motion sickness
- Prefers sedentary activities over movement
- Hard to wake up in the am

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Motor Skill for Vestibular

- What is being assessed? (Photo, Brain Highways)

A person's ability to balance on one foot while engaging in conversation with eyes closed



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Yoga and Mindfulness for Vestibular

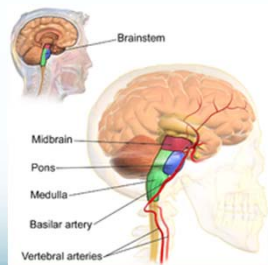
- Take 5
- Alternate Nostril Breathing
- Child's Pose, Turtle (Restorative)
- SuperBrain Yoga (Active)
- Tree Pose/Dancer (Active)
- Warrior Poses (Active)
- Belly Breathing with Eye Pillow



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Pons and Midbrain



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Pons (Latin for Bridge)

- Located Above the Medulla and Below the Midbrain
- Serves as a conduit for many tracts traveling up and down the brainstem
- Muscles of facial Expression
- Vestibular Nuclei which processes Vestibular Information
- Norepinephrine: Arousal, Alertness, Memory and Attention
- Serotonin producing neuron: Regulates Anxiety, Happiness and Mood

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Students with problems with Pons in the Brain

- Appear overly cautious, (like to watch first)
- Reluctant to try something new
- Likes to have everything just right
- Always busy, does not sit and relax
- Does not seem hungry often

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Motor Skill with Pons

- What is being accessed? (Photo, Brain Highways)
 - How a person creeps on his/her belly



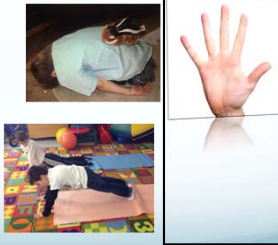
3. "Are you ready? Come and get me!"

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Yoga and Mindfulness for Pons

- Take 5
- Alternative Nostril Breathing
- Child's pose (turtle) Restorative
- Ujjai Darth Vader Breath
- Cat/Cow (Active)
- Twist (Active)
- Lizard (Active)
- Child's pose (Turtle)



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Midbrain: Contains tracts running from the Cerebrum to the Cerebellum

- Vision (Eye Movements, Visual Processing)
- Hearing (Auditory Processing)
- Motor Control/Dopamine Produced
- Sleep/Wake cycles
- Alertness
- Temperature Regulation

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Children with problems with Midbrain

- Has difficulty transitioning
- Gets stuck on a thought
- Touches everything
- Has difficulty focusing
- Hums frequently
- Avoids unexpected touch
- Bothered by textures of clothes and food

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Motor Skill for Midbrain

- What is being assessed? (Photo, Brain Highways)
- How a person crawls on his hands and knees.



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Yoga and Mindfulness for Midbrain

- Take 5
- Bee Breath
- Enchilada with Eye Pillow (Restorative)
- Triangle
- Eagle
- Warrior Poses
- Table
- Belly Breathing using a Flashlight



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Children with problems with Eye Teaming

- Tilt head when conversing with others and reading and writing
- Sit in chair in a weird position
- Appears to be looking at a person with just one eye
- Has difficulty lining up numbers when writing math
- Writes with head on desk

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Children with problems with eye tracking

- Avoid sports that involve tracking a moving object
- Moves head while reading and writing
- Finds reason to get up when watching a live performance
- Does not make eye contact

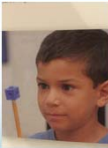
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Eye Teaming and Tracking

Eye Teaming (Photo from Brain Highways)

A person's ability to follow an object coming towards and away from him/her while engaging in an oral cortical task



Eye Tracking (Photo from Brain Highways)

Whether a person's eyes can follow a moving object while engaging in an oral cortical task



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Yoga and Mindfulness for Eye Teaming

- Take 5
- Palming, Tapping
- Eye Pillow on Eyes with Breathing Buddy (Restorative)
- Eyes around the clock (Active)
- Tree Pose (Active)
- Lion Pose (Active)
- Enchilada with Eye Pillow (Restorative)

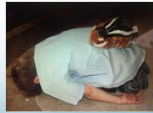


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Yoga and Mindfulness for Eye Tracking

- Take 5
- Palming (Restorative)
- Twist (Active)
- Volcano (Active)
- Reach for the Sun (Active)
- Owl (Active)
- (Child's Pose) Turtle



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10 year old girl with a Sensory Disorder

- Fruit Roll Up Enchilada
- Bee Breath
- Super Brain Yoga
- Lion
- Down Dog
- Rocking Horse
- Table
- Tree



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8 year old boy with ADHD

- Breathing with Flashlight at Belly
- Warrior Poses
- Child's Pose (turtle)
- Eagle Pose
- Owl Pose
- Lizard
- Rocking Horse
- Tree Pose



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19 year old male with Cerebral Palsy

- Legs up on cushions with diaphragmatic breathing
- Twist
- Seated Guided Compassion Meditation
- Warrior I sidelying



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5 Year old boy with Autism

- Child's pose or Turtle
- Belly Breathing
- Cat/Cow
- Lizzard
- Table
- Tree Pose
- Fruit Roll Up or Enchilada



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7 year old girl with Anxiety, Brain Cancer

- Guided Imagery of Allies ([Spinning Inward Book](#) by Maureen Murdock)
- Diaphragmatic Breathing
- Tree Pose outside
- Super Brain Yoga
- Twists, seated
- Warrior Poses
- Relaxation with eye pillow



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National Center for Complimentary and Integrative Health (NCCIH) Health Interview Survey 2017 (every 5 years)

- The percentage of children aged 4-17 years who used yoga in the past 12 months increased significantly from 3.1 percent in 2012 to 8.4 percent in 2017.
- Meditation increased significantly from 0.6 percent in 2012 to 5.4 percent in 2017.
- In 2017, girls were more likely to have used yoga during the past 12 months than boys.
- In 2017, older children (aged 12-17 years) were more likely to have used meditation and a chiropractor in the past 12 months than younger children (aged 4-11 years).

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Design a Relaxation Space at home or in Classroom

- Weighted Bean Bag/Blankets
- Sensory Area
- Yoga Mats to put on top of them for weight
- Individual Chair
 - Theraband/Bungee cord on chair
 - Cut Foam Roller on Chair



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Yoga/Mindfulness

- Stay more focused and pay attention in class
- Awareness of Body, thoughts and emotions increase
- Less text anxiety
- Helps with impulse control, better class management
- www.mindfulschools.org Just Breathe Video
- www.brainhighways.com Motor Skills and Brain Connection
- www.yogakids.com 30 days of Brain Breaks
- www.destressmonday.org

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End of Every Session

- May I be Healthy
- May I be Happy
- May I be Helpful
- Take 5 together
- Take 3 Scoops of light
- We are the guides of the new generation of healthcare

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Objectives

- Demonstrate Yoga Poses that target specific parts of the brain to improve behaviors affecting brain function.
- Employ breathwork, meditation, mindfulness techniques to enhance and change the nervous system specific to each child's diagnosis
- Implement active and restorative poses and sequences for when a child is seated, standing or lying down.
- Create a customized treatment plan incorporating specific yoga, mindfulness and meditation techniques to help children with autism, sensory disorders, neurological disorders, cancer and ADHD be balanced in body and brain

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Some Days You May feel a little



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Go inside and observe
sensation, attention and your
thoughts, rhythm of your
breath



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Growing Compassion Together Namaste



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Continuing Education Credits

Access the Rehab Summit Evaluation on August 1st:

- An email will be sent to your registered email address
- An evaluation link will also be available on RehabSummit.com

Once you have completed the evaluation, you can choose to print, download, or email the certificate for your records.

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