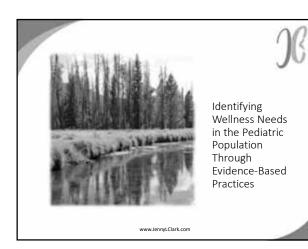




## Course Objectives

- 1. Examine current evidence illustrating health and wellness needs in the pediatric population to substantiate application of therapeutic interventions.
- 2. Analyze health-related challenges in prevalent childhood disorders to correlate a common need across a diverse population of youth.
- 3. Develop a repertoire of occupation-based wellness interventions for youth that can be applied to home, school, and community settings.

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#### Anxiety

- Yoga has been shown to significantly reduce anxiety among children, adolescents, and adults with varying results among populations and clinical conditions
- (Chugh-Gupta, Baldassarre, & Vrkljan, 2013; Weaver & Darragh, 2015)
- Yoga contributes to the reduction of anxiety, and students and teachers view Yoga as valuable with positive changes in students' anxiety, behavior, and self-regulation
- (Weaver, 2016)

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# SPD & Yoga



- Yoga supports the sensory systems by regulating arousal levels
- Yoga provides vestibular, proprioception, & tactile input through movement, muscle contraction, weight bearing, & deep breathing
- The practices involved in yoga (poses, deep breathing, relaxation) offers therapeutic tools to complement the sensory-based interventions Occupational Therapists use with children with sensory processing difficulties
- (Campbell & Martin, 2017)

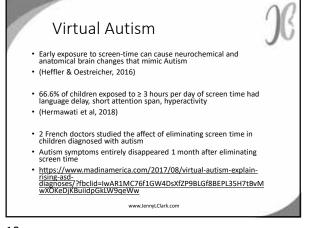
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### Autism & Yoga



- Yoga helped children with ASD increased concentration, focus, organization and relaxation after 25 yoga sessions
- (Oldenberg, 2004)
- Yoga yielded significant improvements in motor imitation, behavior at home, and family relationships
- Researchers also hypothesized that guided imitation of therapist body positions stimulated mirror neuron activation, resulting in improved sense of self
- (Radhakrishna et al., 2010)
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#### Screen Time for Children? **Problems & Recommendations** More than 1 hr/day (AAP recommended screen time in preschoolers) results in lower measures of myelination tracts (white matter) in brain development, affecting language, literacy, and executive fx skills. • (Hutton, et al, 2019)

- Increased screen time correlates with decreased developmental milestone performance in children ages 36-60 months
- (Madigan, et al, 2019)
- · Higher amount of screen time is related to lower fine motor skills.
- (Webster, et al , 2019)
- World Health Organization Screen time recommendations (2019)
- Infants under 12 months should not be exposed to electronic screens
- Children ages of 2 and 4 no more than 1 hour of "sedentary screen time" each day
- Children under 5 should also get more exercise and sleep in order to develop healthy habits to stave off obesity and diseases

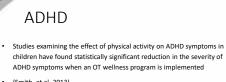
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### "Internet Gaming Disorder"

#### • <u>The DSM-5</u>

- Withdrawal symptoms when gaming is taken away (sadness, anxiety, irritability)
- Inability to reduce playing, unsuccessful attempts to quit gaming
- Giving up other activities, loss of interest in previously enjoyed activities due to gaming
- Deceiving family members or others about the amount of time spent on gaming
- The use of gaming to relieve negative moods, such as guilt or hopelessness
- A person must engage in this behavior for at least 12 months



- (Smith, et al. 2013)
- Additional research indicates that "green outdoor settings" reduces symptoms in children with ADHD
- Environmental psychologist Stephen Kaplan states "natural environments engage the mind effortlessly thus helping with *attention restoration*, giving the brain a break from deliberate direct attention"
- (Kuo & Taylor, 2004)

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## ADHD & Yoga

- ADHD symptoms significantly decreased in children after 8 yoga sessions during inpatient stay child psychiatry unit
- (Hariprasad et al., 2013)
- Yoga helped increase time on task for students with ADHD in educational setting (Peck, et al., 2005)
- Yoga has a positive impact on executive functioning skills in children with ADHD. 8-week yoga program improved sustained attention, discrimination function, significantly better reaction time and response accuracy compared to control group
- (Chou & Huang, 2017)

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## Nature-Deficit Disorder

- 'Nature-Deficit Disorder' is a term coined by Richard Louv in his book Last Child in the Woods (Algonquin Books, 2004)
- Children are spending less time outdoors resulting in a wide range of behavioral problems
- 3 Causes:
- · Parental fears (keeping children safe from dangers outside)
- Restricted access to natural areas (decrease in green spaces)
- Time spent using electronic media (Some studies suggest the average time spent on electronics= 44 hours per week)

#### Evidence to support the importance of exposure to nature/green space • Children who grow up living near green spaces have 55% less risk of developing mental health disorders later in life

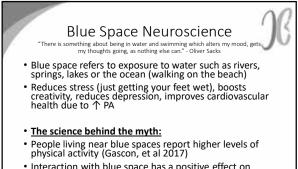
• (Aarhus University, 2019)

#### There is a positive correlation between the "greenness" of the school area & school-wide academic performance

• (Wu, et al, 2014)

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Interaction with blue space has a positive effect on mental health (Gascon, et al 2017)
Water fountain sounds manage anxiety (Abd El Aziz)

 Water fountain sounds manage anxiety (Abd El Aziz A. N, et al 2012)
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## Get Kids Moving!



- What is the common denominator among these children with special needs?
- Reduced physical activity!
- https://www.gocomics.com/foxtrot/2019/06/23
- Physical activity improves childhood cognition, executive functioning, & brain health (Hillman, et al, 2014)
- Studies show that kids who play outside are happier, more focused, less anxious
- Stimulates social interactions
- Increases physical activity
- Improves problem solving
  Enhances creativity
- <u>https://www.childrenandnature.org/research-library/</u>

#### What all the research indicates is that wellness is important for active engagement & participation in childhood occupations

- Playing/Physical activity: muscle strength, balance, flexibility, endurance
- Eating healthy food: nutrition, energy, stamina
- Quality sleep: alertness, focusing, concentration, learning
- Friends/social skills/relationships: emotional regulation, self-esteem

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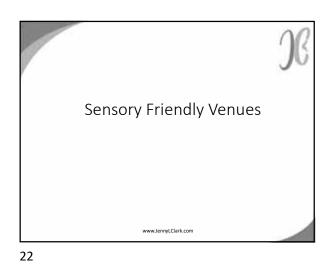


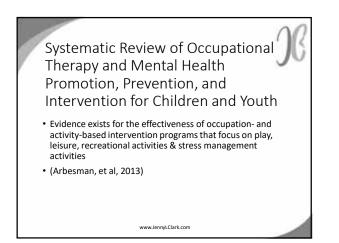
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### AOTA 2025 Vision



- Vision 2025: Occupational therapy maximizes health, well-being, and quality of life for all people, populations, and communities through effective solutions that facilitate participatio in everyday living.
- The profession of OT supports Health, Well-Being, and Quality of Life
- A humor camp for children with autism to help them interact socially
- Embed strategies for all students throughout the learning environment
- Sensory-friendly venues: movie theaters, museums, NBA, restaurants
  - https://www.understood.org/en/community-events/blogs/in-thenews/2018/05/04/nba-creating-sensory-rooms-at-over-half-of-its-arenas
  - <u>https://www.chuckecheese.com/events/sensory-sensitive-sundays</u>
  - <u>https://blueskypit.com/2019/05/13/sensory-rooms-aviations-latest-trend/</u>
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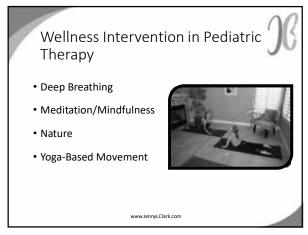
### Health promotion in Pediatric Therapy

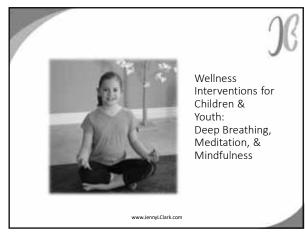
- Therapists create healthpromoting activities for children to enhance physical & emotional well-being
- Research indicates that complementary health approaches, physical activity, exposure to nature, yoga, and meditation can be effective therapeutic strategies

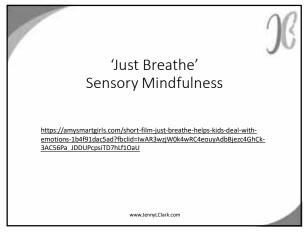




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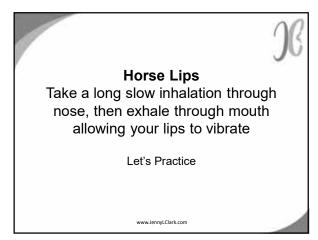
#### Wellness Intervention for Children &Youth: Deep Relaxed Breathing

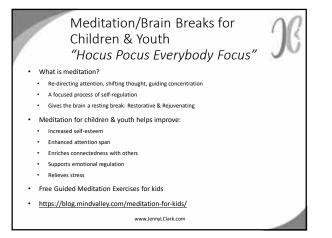
• Breathing at the rate of 5-6 breaths/minute reduces anxiety, insomnia, fatigue, & emotional dis-regulation

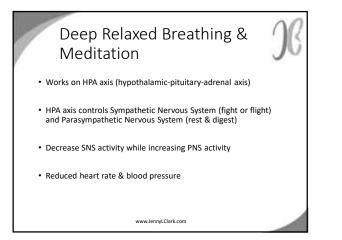
- Conscious attention to breathing patterns effects the ANS for regulating physiological response to stress
- Anatomy of Deep Breathing:
  - Diaphragm muscle separates thoracic & abdominal cavities
  - Intercostal muscles b/w ribs help chest cavity expand outward
  - Collarbone, sternum, back & neck muscles expand cavity upward











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#### Meditation/Brain Breaks for Children & Youth: Using the Senses to Integrate Brain & Body for Self-Regulation

- Vestibular Moving meditation walking around school, navigating an obstacle course
- Proprioception Progressive muscle relaxation meditation
- Tactile Sensory tubs with nature items, home made hand fidgets
- Visual- Coloring meditation; kids color mandala picture, look out window, have green plants in classroom
- Auditory- Listening meditation; Use nature sound app Relax
  Melodies
- Interoception- Body scanning meditation
- Cardiovascular- Deep breathing, make it fun using imagination



#### Mindfulness for Children & Youth

- What is Mindfulness? Purposefully paying attention in the present moment, without judgment
- Sensory Self-Regulation = Mindfulness
- Tune in to what you are doing and how you are feeling using the senses · Focus on breathing

  - Attend to your emotional state Bring attention to your body while moving •
- · Mindful Moments
- <u>https://circles.projecthappiness.org/documents/mindful-</u> moments.pdf
- Creative Problem Solving: Social Skill activities for Emotional Self-Regulation
- <u>https://sociallyskilledkids.com/social-skills/</u>

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#### Mindfulness Strategies: Nature & Sensory Self-Regulation for Children & Youth

- Associate the principles of sensory integration with nature
- Vestibular Hiking, walk garden labyrinth, run outside
- Proprioception Climb playground equipment, climb trees
- Tactile Feel the texture of a tree trunk, dirt, leaves, rocks, walk barefoot on different textured surfaces; grass, sand, pebbles, water
- Auditory Listen to nature sounds; water, wind, animal sounds

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#### Mindfulness Strategies: Nature & Sensory Self-Regulation for Children & Youth

- Visual Look at trees, plants, & flowers
- Olfactory Smell fresh air, pinecones, flowers
- Gustatory& oral sensory Taste garden
- vegetables/herbs • To engage executive functioning skills, talk about 1-2
- nature facts specific to the object
  - www.JennyLClark.com

#### Interoception & Its Role in Health & Wellness for Children/Youth • What is Interoception? The perception of emotional states & physiological feedback from the body • Examples; hunger, thirst, sleepiness, need to go to bathroom, pain, muscle aches, heartbeat, itching, emotion identification • Interoception center - Insula

- Interoception center Insula
- Associated w/ Autonomic Nervous System (ANS)
- Assists with self-regulation
- Helps maintain homeostasis
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### Interoception & Its Role in Health & Wellness for Children/Youth

- Interoception is important for the selfregulation of health-related behavior
- Children with higher IS performed better in the physical performance task
- IS was positively correlated with the extent of light PA levels in the morning and afternoon
- IS interacts positively with the degree of PA in children
- (Georgiou et al, 2015)

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#### Mindfulness Strategies: Helping Kids Improve Interoception Awareness for Sensory Self-Regulation

- Develop internal awareness (Interoception)
- Magic School Bus Inside the Human Body
- "Arnold has swallowed the Magic School Bus! Now, instead of seeing an exhibit of the human body at a museum, the class is taking a look at Arnold's stomach, his intestines, his bloodstream, and more from the inside on this heart-stopping field trip."



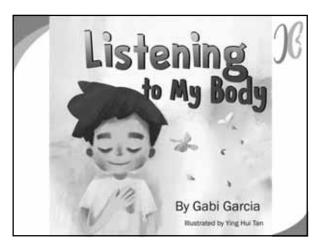
Live demo; show & talk

 heart-stopping field trip."
 about Magic School bus

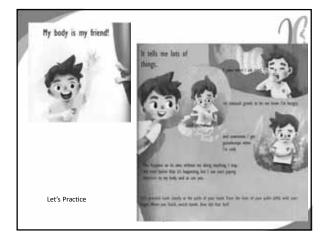
 https://www.scholastic.com/teachers/books/ms
 book

 b-inside-the-human-body-by-joanna-cole/
 book

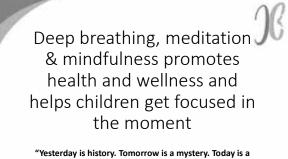










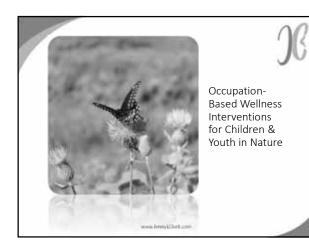


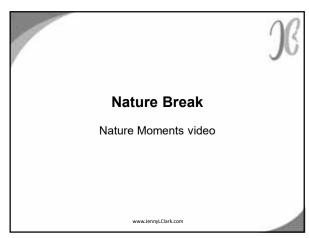
gift. That's why it's called the present."

Alice Morse Earle

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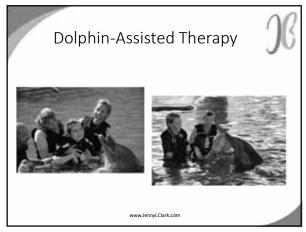






- Humane Society: Community volunteering • Take care of a pet at home (fish, turtle, bird, hamster, rabbit, cat, dog) Develops responsibility & social skills
- Animal-Assisted Therapy
- Dolphins https://islanddolphincare.org/
- Dogs <u>http://autismservicedogsofamerica.com/</u>
- Horses https://www.equestriantherapy.com/hippotherapy-kids-special/

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#### Nature Experiences for Children & Youth: Plants & Trees

- Plants: Visit a Botanical garden or Nursery Store
- Identify flowers & plants: Work on reading skills, handwriting skills, executive functioning with organizing thoughts & info
- Collect nature items & teach about sensory qualities
  - Tactile/textures of tree bark, leaves, grass, pinecones, search for 4 leaf clover (visual figureground)
- Snap photos of nature & make a scrapbook

  Cutting, pasting, handwriting skills

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### Nature Experiences for Children & Youth: Insects

- Insect art projects
  - Paper lady bugs
  - Coffee filter butterfly
  - Small paper plate lacing spider web
- Edible snack art
  - Ants on a log (celery, PB, raisins)
  - Gummy worms in chocolate pudding
  - Marshmallow & licorice spiders

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### Nature Experiences for Children & Youth: Birds

- Identify & learn about types of birds in your ecosystem. Look at photos, listen to their unique sounds from an app
   Executive functioning skills
- Listen for bird sounds outside
   Auditory processing/localization



Make a pine cone & PB birdfeeder
 Fine motor skills, bilateral coordination, sensory tactile & olfactory

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#### Meaningful Occupation in Nature for Children & Youth Get kids outside - Parents will benefit too! • Playgrounds & Parks • National Parks • Hiking with kids

- Geocaching
- Biking with kids
- Painted Rocks • Therapeutic Gardening
- Camping Fishing

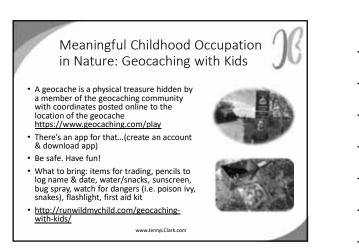
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• Interested youth complete a series of activities during a park visit, share their answers with a park ranger, and receive an official Junior Ranger badge and Junior Ranger certificate.





#### Meaningful Childhood Occupation in Nature : 'Painted Rocks'

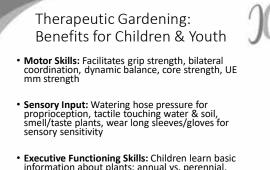
- Paint a smooth flat rock using
- acrylic paint & seal it • Take photo of rock and post to Facebook page
- https://paintedrocklife.com/
- Hide the rock in parks, familyfriendly hiking trails, playgrounds
- If you find the rock, post a photo.
- Keep the rock or hide it again!

 For teens - Write positive affirmations on rocks



#### Jenny's painted rocks Facebook page: Dolphin65

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• Executive Functioning Skills: Children learn basic information about plants: annual vs. perennial, sun or shade, watering needs, pretend play with fairy garden

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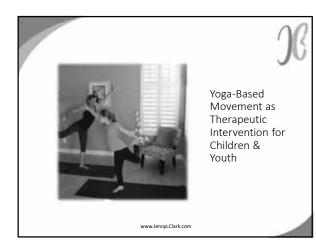












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#### Benefits of Yoga-Based Movement for Children & Youth

- Improves motor coordination
- Promotes social interactions
- Increases strength & flexibility
- Improves quality of sleep
- Facilitates sensory body awareness
- Reduces stress and anxiety
- Supports emotional regulation: sense of accomplishment, determination, self-esteem

### Yoga in Schools

- School-based modified yoga-based intervention
- 5 minutes of yoga integrated into school day
- Enhanced students' sense of belonging
- Decreased disruptive behaviors in the classroom
- Heightened students' self-awareness
- Contributed to higher level cognitive functioning
- Increased emotional stability
- Potentially decreased overall bullying behaviors in schools
- (Fauber et al, 2017)

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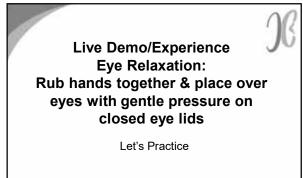
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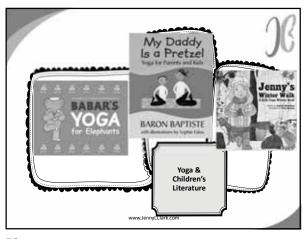
### Yoga Poses for Children & Youth: Eye Pillows for relaxation

- Slightly weighted, can use bean bags or small bean bag animals
- Gentle pressure around the orbit of the eye decreases heart rate
- Stimulates vagus nerve (10<sup>th</sup> cranial nerve): regulates heart rate, digestion, & mood
- Triggers the parasympathetic heart-slowing reflex 'oculocardiac reflex'
- Kids do this naturally: Tired child rubs eyes, this stimulates vagus
  nerve, slowing heart rate to prepare for sleep

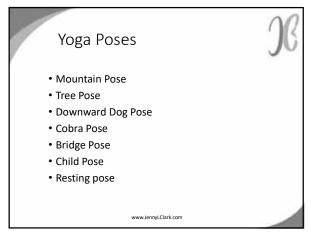
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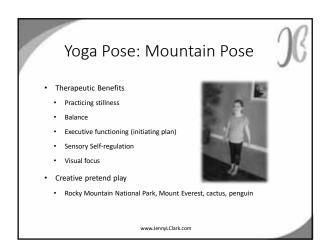
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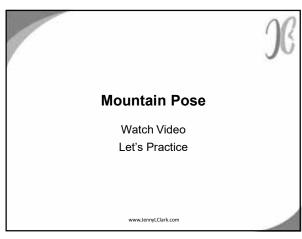


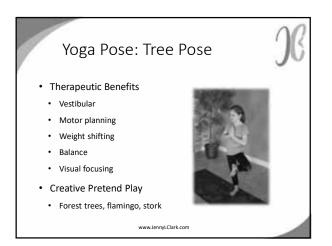












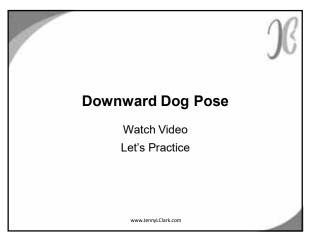


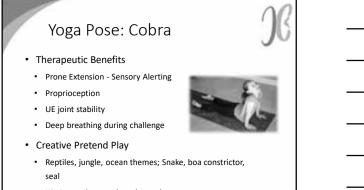


- Slows respiration
- Head inversion blood to brain VP skills
- Creative Pretend Play
  - Wolf, coyote, pet dog, bear
  - Vocalize animal sounds

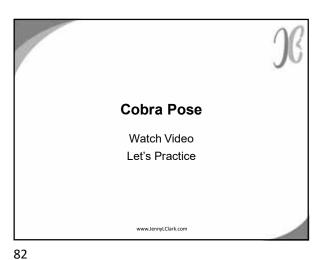


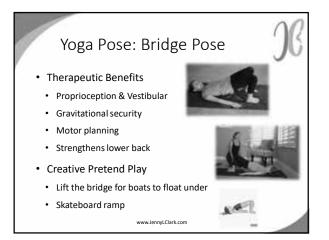




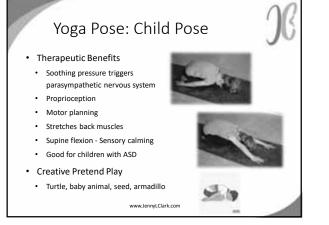


Hissing snake sound, seal sound
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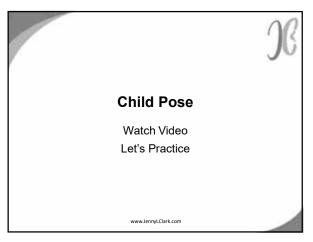












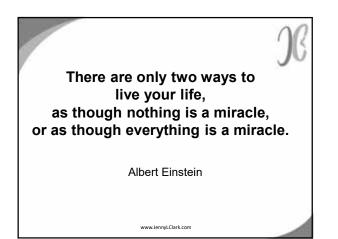
### Knees to Chest Yoga

- Knees to chest/Fetal position=Super sensory hug
- Sensory soother and self-regulator helps to shut out the sensory world and learn how to self-regulate using your own body and breath.
- Benefits: Releases endorphins to help decrease anxiety, aids digestion, activates lymphatic system

# Yoga Pose: Savasana/Resting Pose • Restorative • "Even though we were in this pose for 1 minute, I feel so relaxed and rested like I slept a whole night!" (8-year old girl)

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## Conclusion

- Integrating nature experiences, yoga poses, meditation, & mindfulness strategies into therapy can facilitate a child's growth & development
- It is my hope that this presentation has inspired you to get outside & enjoy nature
- When we practice wellness in our daily lives, we experience the benefits, this helps us to be better role models for children
- We do by example. We inspire. We make a difference!