

Mind-Body Therapies in Children and Youth

Hilary McClafferty, MD, FAAP

Timothy Culbert, MD, FAAP

Lawrence Rosen, MD, FAAP

AAP Section on Integrative Medicine





Overview of Today's Webinar

- Introduction to mind-body therapies in youth
- Mind-body therapies: definitions, clinical applications, training, resources
 - Biofeedback
 - Yoga
 - Mindfulness and mindfulness-based stress reduction (MBSR)
 - Hypnosis and guided imagery
- Summary/conclusions
- More information...

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Why Are We Presenting This Topic?

In our collective experience, we find that children, teens, and their parents are looking for non-pharmacological options to manage pain (and related symptoms like anxiety and nausea).

Empowering patients with self-regulation (mind-body) skills improves outcomes (symptom control and quality of life).

The evidence is not perfect, but—we want to get you interested enough to learn more about it!





Mind-Body Therapies in Children and Youth

- This webinar is based on a new clinical report.
- American Academy of Pediatrics (AAP) Section on Integrative Medicine
- Vohra, King-Jones, McClafferty, Becker, Bethell, Culbert, Rosen, Sibinga
- *Pediatrics*, September 2016, Volume 138 (3), e1896
- This clinical report was “...intended to help health care professionals guide their patients to non-pharmacologic approaches to improve concentration, help decrease pain, control discomfort, or ease anxiety.”

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Use of Mind-Body Therapies By Children

- 2012 National Health Interview Survey
 - 3.7% of children ages 4–17 years used mind-body skills.
 - In teens, ages 13–17 years, females utilized mind-body skills more than twice as much as males (5.7% vs 1.7%).
 - Why use mind-body approaches?
 - Pain-related conditions
 - Emotional/behavioral or mental health issues
 - Reduce stress level/relax, overall health, general wellness and disease prevention, to feel better emotionally



Mind-Body Medicine Approach

Mind-body medicine focuses on the interactions among the brain, mind, body, and behavior... And on the powerful ways in which emotional, mental, social, spiritual, and behavioral factors can directly affect health.

nccih.nih.gov

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Adapted from Cohen MH, Eisenberg DM. Potential physician malpractice liability associated with complementary and integrative medical therapies. *Ann Intern Med.* 2002;136(8):596–603.



BIOFEEDBACK

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Biofeedback: Definition

- The use of electronic or electromechanical equipment to measure and then feedback information about physiological processes to an individual. This information (visual, kinesthetic, auditory, or multimedia feedback) can then be modulated by the individual for therapeutic purposes.



Common Biofeedback Modalities

- Muscle (EMG): electrical muscle activity
- Temperature (TMP): peripheral hand temperature
- Skin Conductance (EDA): sweat gland activity
- Heart Rate Variability (HRV): patterns in heart rate
- Pneumography (PNG): movements with breathing
- Capnography (CAP): exhaled carbon dioxide
- Brain Waves (EEG): electrical brain activity
- Blood Flow (HEG): cranial blood vessel flow

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Biofeedback: Clinical Applications for Youth 1

- Headaches (tension and migraine)
 - Peripheral TMP biofeedback
 - Bifrontal EMG biofeedback
- Asthma
 - PNG biofeedback
 - EMG biofeedback
 - HRV biofeedback
- Rehabilitation
 - Multichannel EMG biofeedback



Biofeedback: Clinical Applications for Youth 2

- Dysfunctional voiding and encopresis
 - Pelvic floor surface EMG biofeedback
 - Anorectal EMG biofeedback
 - Rectal manometric (pressure balloon) biofeedback
- Attention-deficit/hyperactivity disorder
 - EEG biofeedback
 - For example: suppressing excess theta wave activity and increasing beta wave activity



Biofeedback: Clinical Applications for Youth 3

- Not yet conclusive but up and coming...
 - Emotional regulation/stress management
 - EDA biofeedback
 - HRV biofeedback
 - EEG biofeedback
 - Chronic pain syndromes
 - HRV biofeedback
 - Insomnia
 - HRV biofeedback
 - EDA biofeedback
 - TMP biofeedback
 - EEG biofeedback

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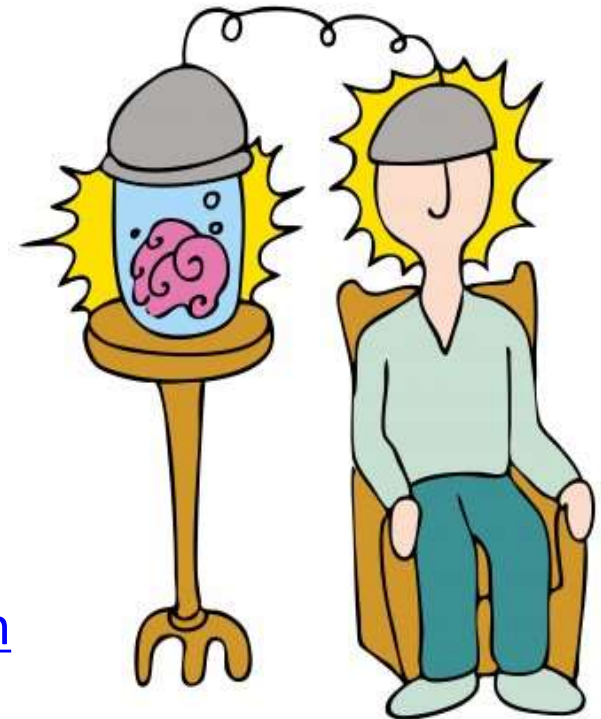
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Portable Biofeedback Devices for Clients

- Digital Peripheral Temperature
 - Stress Thermometer – www.cliving.org
- Skin Conductance
 - Sweat Gland Activity – thepip.com
- Brain Wave Activity
 - EEG Headband – www.choosemuse.com
- Heart Rate Variability
 - Inner Balance App – www.heartmath.com
- Biofeedback Games
 - Journey to Wild Divine – wilddivine.com



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Biofeedback: Training and Resources

- Stens Corporation
 - Peripheral biofeedback modalities
 - EEG biofeedback
- Biofeedback Certification International Alliance
 - Certifications
- Biofeedback Foundation of Europe
 - Training all modalities
- HeartMath LLC and HeartMath Institute
 - Heart rate variability training and research
- Association for Applied Psychophysiology and Biofeedback
 - Practitioner organization

****Most biofeedback use does not require formal training.****



YOGA

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Yoga: Definition

- From the Sanskrit “yuj” = union, to join
- National Center for Complementary and Integrative Health (NCCIH): *“Yoga is a mind and body practice with origins in ancient Indian philosophy. The various styles of yoga typically combine physical postures, breathing techniques, and meditation or relaxation.”*
- Therapeutic yoga is designed to improve stress coping, lessen pain, and improve specific health conditions.

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Yoga: Epidemiology

- 2012 National Health Interview Survey (NHIS)
- 9.5% of US adults (21 million) practiced yoga in 2012
- 3.1% of US children (1.7 million) practiced yoga in 2012
- Both up significantly compared with 2007 NHIS

National Health Interview Survey (NHIS). Use of Complementary Health Approaches in the U.S. Available at nccih.nih.gov/research/statistics/NHIS/2012/mind-body/yoga



Yoga: Evidence

- Systematic review of controlled trials of pediatric therapeutic yoga as sole intervention
- 14 published studies met criteria (through 2013)
- Positive effects on psychological functioning, especially in children coping with emotional, mental, and behavioral health problems
- Educational curricula incorporating stress management programs improve academic performance, self-esteem, classroom behaviors, concentration, and emotional balance.

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Yoga: Evidence

- In 4 controlled trials, yoga was demonstrated to positively influence metabolic and hormonal parameters (obesity, polycystic ovary syndrome).
- No documentation of serious adverse effects in any published pediatric yoga trials to date
- Limitations of reviewed studies include small sample sizes, high attrition rates, lack of evaluator blinding, reliance on self-report measures, and heterogeneity of intervention and control designs.

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Yoga: Future Directions for Research

- Well-designed controlled trials of yoga for conditions with strong stress-modulated components are warranted.
- Excellent candidate conditions include asthma, irritable bowel syndrome (IBS), inflammatory bowel diseases, juvenile idiopathic arthritis, and fibromyalgia.
- Given the preference for yoga in studies of children with chronic pain, coupled with biological plausibility for response, limited potential for adverse effects, and promising pilot data, there is a great need for controlled studies in this population.

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Yoga: Clinical Applications

- Stress-management, especially in patients with emotional, mental, and behavioral health concerns
- Educational settings: academic performance, self-esteem, classroom behaviors, concentration; schools may be an ideal setting to bring yoga to a heterogeneous, socioeconomically diverse sample of children.
- Obesity/metabolic disorders
- Pain management

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Yoga: Resources

- NCCIH Yoga – nccih.nih.gov/health/yoga
- International Association of Yoga Therapists – iayt.org
- Yoga Alliance – www.yogaalliance.org
- Kripalu Yoga in the Schools Teacher Training – kripalu.org/kyis-teacher-training
- Yoga in Schools – yogainschools.org
- YogaKids Training – yogakids.com/training-and-certification





MEDITATION & MBSR

(Mindfulness-Based Stress Reduction)

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"Are you not thinking what I'm not thinking?"



Meditation and MBSR: Definitions

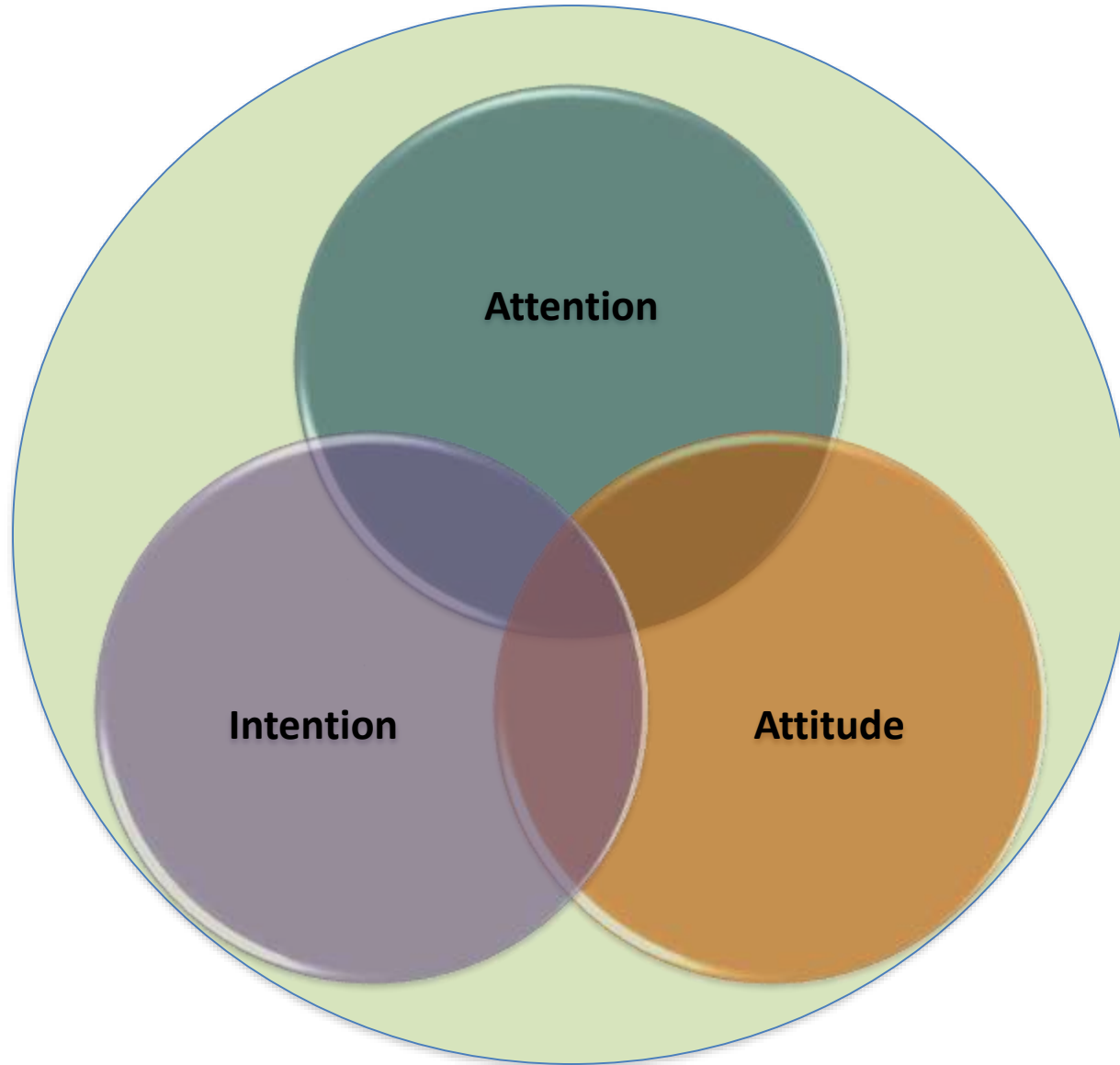
- **Meditation:** The practice of intentional attention training. There are a variety of approaches, including mindfulness meditation and concentration meditation.
- **MBSR** (mindfulness-based stress reduction) refers to an approach that cultivates purposeful and non-judgmental awareness of the present moment through cognitive, emotional, and sensory experiences, typically through an 8-week program.



Mindfulness: Definition

- Paying attention with moment-to-moment awareness
- On purpose
- In a particular way
- Without judgment

Adapted from Kabat-Zinn J. *Mindfulness for Beginners: Reclaiming the Present Moment—and Your Life*. Boulder, CO: Sounds True, Inc.; 2016.





Mindfulness in Children

- The brain is more pliable between
 - Birth and 2 years
 - 4 and 6 years
 - Around puberty
- Children need an active and sensory-rich approach to mindfulness.

Center for Healthy Minds, University of Wisconsin–Madison. centerhealthyminds.org



Meditation and MBSR: Approaches

- Mindful breathing
- Body scan
- Mindful movement
- Compassion meditation
- Love, kindness, gratitude toward self and others
- Everyday mindfulness, informal practices
- Mindfulness-Based Stress Reduction Program – Jon Kabat-Zinn

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Meditation and MBSR: Clinical Applications 1

- Respects children's capacity for coping
- Recognizes their intelligence
- Supports their natural ability to pay attention
- Does not deny what is happening
- Acknowledges and nurtures their capacity to be present in the face of challenging events

American Academy of Pediatrics Section on Integrative Medicine. Mind-body therapies in children and youth. *Pediatrics*. 2016;138(3):e20161896.
Available at pediatrics.aappublications.org/content/138/3/e20161896





Meditation and MBSR: Clinical Applications 2

- Mindfulness has shown promise in these areas:
 - Mental health
 - Coping skills
 - Self-regulation
 - Improved self-esteem
 - Decreasing elevated blood pressure
 - Reduction in negative school behaviors such as absenteeism

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Mindful Kids Exercises

- Parents and other adults should ideally serve as role models.
- Teach children to apply mindfulness practices during challenging situations.
- Remember to acknowledge what is actually happening in the moment.
- Daily practice will help to build skills and promote resiliency.
- Develop an appreciation practice.
- Send friendly wishes (self, friend, others, the world).
- Practice compassion for self and others through loving-kindness.
- Use positive affirmations.



Meditation and MBSR: Training and Resources

Centers of Study

- Center for Healthy Minds, University of Wisconsin–Madison – centerhealthyminds.org/join-the-movement/well-being-tips-for-children-and-their-families
- Child Mind Institute – childmind.org/article/the-power-of-mindfulness
- The Chopra Center – www.chopra.com/articles/4-exercises-to-teach-your-kids-about-mindfulness-and-compassion
- Center for Mindfulness, University of Massachusetts Medical School, Jon Kabat-Zinn – www.umassmed.edu/cfm

Apps

- Stop, Breathe & Think
- Take A Chill
- Sleep Meditations For Kids
- Mindfulness for Children



Meditation and MBSR: Training and Resources

- *Planting Seeds: Practicing Mindfulness with Children* by Thich Nhat Hanh
- *A Still Quiet Place: A Mindfulness Program for Teaching Children and Adolescents to Ease Stress and Difficult Emotions* by Amy Saltzman and Saki Santorelli
- *The Mindful Child: How to Help Your Kid Manage Stress and Become Happier, Kinder, and More Compassionate* by Susan Kaiser Greenland
- *The Mindfulness Revolution: Leading Psychologists, Scientists, Artists, and Meditation Teachers on the Power of Mindfulness in Daily Life* edited by Barry Boyce
- *Train Your Mind, Change Your Brain: How a New Science Reveals Our Extraordinary Potential to Transform Ourselves* by Sharon Begley
- Stressed Teens – www.stressedteens.com
- Center for Healthy Minds – www.centerhealthyminds.org
- Mindful Schools – www.mindfulschools.org

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HYPNOSIS & GUIDED IMAGERY

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Hypnosis



Hermin Utomo. © 123RF.com

- Misperceptions
 - Control-all hypnosis is self-hypnosis.
 - It is not like sleep.
 - It is not for entertainment.
- Hypnosis, guided imagery, and visualization are all similar.
- Certification and training requirements vary widely.

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Hypnosis and Guided Imagery: Definitions

- **Hypnosis:** When individuals are in a state of hypnosis or what has been termed “trance,” they enter an altered state of awareness within which they can intensify attention, decrease peripheral awareness, and become more receptive to new ideas, suggestions, and associations.
- **Guided Imagery:** Guided imagery can be described as the use of relaxation and mental visualization to improve mood and/or physical well-being. It often invokes the use of all the senses and directs one’s imagination in proactive, positive ways.



Hypnosis and Guided Imagery: Clinical Applications

Clinical Hypnosis

- Pain
 - Functional abdominal pain and IBS
 - Procedural pain
 - Cancer
 - Perioperative pain
 - Headaches
 - Voiding cystourethrogram procedural discomfort
- Anxiety
- Cancer chemotherapy
- Tics/Tourett's
- Immune system support
- Asthma

Guided Imagery

- Functional recurrent abdominal pain
- Lifestyle change



Hypnosis and Guided Imagery: Training and Resources

- National Pediatric Hypnosis Training Institute
 - www.nphti.org
- American Society of Clinical Hypnosis
 - www.asch.net
- American Board of Medical Hypnosis
 - www.abmh.info
- Academy for Guided Imagery
 - www.acadgi.com



SUMMARY & CONCLUSIONS

Mind-Body Therapies in Children and Youth

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"Are we there yet?"



Mind-Body Therapies in Children and Youth: More Skills, Less Pills!

- The available evidence supporting the use of mind-body skills in children and youth varies in quantity and quality, but generally is supportive of mind-body therapies as safe and potentially effective in common and debilitating conditions, including pain and anxiety.
- Additional potential benefits for school-age children include improved concentration and self-esteem.
- Mind-body therapies can directly effect physiology, including cardiovascular, nervous, endocrine, gastrointestinal, and immune system functions.
- Teaching children mind-body skills as a form of self-regulation may have many long-term benefits.
- Pediatric healthcare providers are encouraged to facilitate an open dialogue with their patients/families about the use of complementary therapies and become familiar with mind-body therapies as non-pharmacologic options to improve mood, behavior, and quality of life.



Steps of Mind-Body Skills Training

- Discern (mind-body awareness)
 - Discriminate (objectively) the mind-body differences between sympathetic nervous system arousal (stress) and parasympathetic nervous system dominant states (relaxation response).
- Control (mind-body self-regulation)
 - Learn to modulate (first in a controlled environment) a given psychological or physiological function, in a therapeutic direction, consistently.
- Generalize (transfer the mind-body skill to real life)
 - Apply this ability to self-regulate mind and body in appropriate life situations, as needed, “in the moment.”
- Restructure (central nervous system) and reset (baseline autonomic nervous system) with regular practice
 - Neuroplasticity: long-term changes and benefits with daily practice
 - Recognize effects of stress and relaxation as epigenetic modifiers.

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"Give it to me straight, Doc. How long do I have to ignore your advice?"



...But Will Kids Practice Mind-Body Skills?

- Only if you make it interesting!
 - Biofeedback gadgets
 - Books and CDs
 - Mobile apps
 - Bubbles and pinwheels
 - YogaKids/Yoga Calm groups
 - Games





Mind-Body Therapies: Resources

- *Hypnosis and Hypnotherapy With Children*, Fourth Edition by Daniel Kohen and Karen Olness
- *Biofeedback: A Practitioner's Guide*, Fourth Edition edited by Mark Schwartz and Frank Andrasik
- *A Still Quiet Place: A Mindfulness Program for Teaching Children and Adolescents to Ease Stress and Difficult Emotions* by Amy Saltzman and Saki Santorelli
- *Sitting Still Like A Frog: Mindfulness Exercises for Kids (and Their Parents)* by Eline Snel
- *Mindfulness for Beginners* by Jon Kabat-Zinn
- *Integrative Pediatrics* by Timothy Culbert and Karen Olness
- *Yoga As Medicine: The Yogic Prescription for Health and Healing* by Timothy McCall
- *Yoga For Children: 200+ Yoga Poses, Breathing Exercises, and Meditations for Healthier, Happier, More Resilient Children* by Lisa Flynn
- *Staying Well With Guided Imagery* by Belleruth Naparstek
- *Guided Imagery Work With Kids: Essential Practices to Help Them Manage Stress, Reduce Anxiety & Build Self-Esteem* by Mellisa Dormoy
- *Transforming Stress for Teens: The HeartMath Solution for Staying Cool Under Pressure* by Rollin McCraty, Sarah Moor, Jeff Goelitz, and Stephen Lance



Mind-Body Skills in Children and Youth: Mobile Applications

- Mobile apps
 - Breathwork
 - Breathing Zone
 - Breathe 2 Relax
 - Meditation
 - Take A Chill
 - Stop, Breathe & Think
 - Smiling Mind

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Mind-Body Skills in Children and Youth: Mobile Applications

- Mobile apps
 - Yoga
 - The Adventures of Super Stretch
 - Yoga By Teens
 - Kids Yogaverse
 - Other
 - MeMoves (calming movement and music)
 - Healing Buddies Comfort Kit (symptom management)



Mind-Body Skills in Children and Youth: Contacts

- AAP Section on Integrative Medicine
 - tsalus@aap.org
- Hilary McClafferty, MD, FAAP
 - Tucson, Arizona
- Tim Culbert, MD, FAAP
 - Minneapolis, Minnesota
- Larry Rosen, MD, FAAP
 - Oradell, New Jersey

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