Building a Brighter Future
Pediatric Integrative Medicine
Westbrook, Connecticut
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MISSION

Connecticut Children's Medical Center is dedicated to improving the physical and emotional health of children through family-centered care, research, education and advocacy. We embrace discovery, teamwork, integrity and excellence in all that we do.

VISION

We are making children in Connecticut the healthiest in the country.

CORE VALUES

Family-Centered Care • Discovery • Integrity • Teamwork • Quality • Respect
Pediatric Integrative Medicine

- I have no conflicts of interest to disclose
- I am an employee of Connecticut Children’s
Presentation Objectives

• Identify components of the Integrative Medicine (IM) Wheel

• **Introduce** common IM modalities: Hypnosis, Biofeedback, Massage, M-Technique Hand Massage, Aromatherapy

• Patient video:
  – Needle phobia
  – Post op pain s/p Nuss procedure repair pectus excavatum

• Identify **reliable** Integrative Medicine Resources (local and national)

• Future of IM at CCMC-
  – Development in patient/outpatient Aromatherapy Program
  – QiGong massage: assist patient with Autism
  – Multidisciplinary Clinic Patients Sickle Cell Disease
Change of Practice: Reduce Suffering

Pediatric Health Care Professionals are unique in their potential to intervene and change outcomes for their patients.

They have the greatest opportunity to positively impact their patients/and their families toward Mind-Body-Spirit philosophy healthcare.

In essence, their crucial role can potentially reduce suffering
Pediatrics: **Shift** in Medical Conditions

- Increase in chronic illness: asthma, obesity, ADHD, chronic pain conditions, prematurity...
- Chronic pain worldwide: 20% to 35%
- 17% adult chronic pain patients history chronic pain children/adolescents
- Estimated 10% hospitalized children features chronic pain
- Chronic pain affects *entire nervous system*: fatigue, non restorative sleep patterns, cognitive and mood negatively impacted
Pediatrics: **Shift in Medical Conditions**

- Most patients use IM chronic pain, chronic illness
- **Increase in Mental Health Disorders**
  - Occurs in almost 20% adolescents
  - Approx 2% of school aged children and 8% adolescents meet criteria major depression
  - 2007 suicide leading cause of death in 15-24 yo
  - Anxiety one of most common mental health conditions peds. ! Year prevalence 9-17 est 13%
  - National Institute Mental Health 2011
Anxiety prevalence and risk factors

Anxiety/depression has increased in US high school since 2012

2015- 3 Million teens 12-17 yo at least 1 episode depression

(Dept Health Human Services)

Anxiety disorders are the most common psychological condition impacting 6% to 20% children and adolescents developing countries

Walkup JT et al, NEJM 2008
What do Our Patients need?

• Skills involve *self* regulation, *sense of control*

• *Opportunity* to participate in their *own* care

• Less exclusive reliance on medication

• *Multidisciplinary* approach to care

• Emphasis on basics: food, sleep, exercise, emotional support

This is where Integrative Medicine Thrives
Lifestyle: Stress Management

- Stress is common especially in our hospital pt population
- Stress precipitants/triggers that affect pain, mood, sleep
- Managing stress: exercise, restorative sleep, nutrition and adequate fluid intake
- Promoting self coping skills: Mind Body Spirit Connection
  - Breath work
  - Guided Imagery, Hypnosis, Meditation,
  - Yoga
  - Massage, M technique massage
  - Aromatherapy
  - Biofeedback

Reducing stress helps 50% - 70% of headache sufferers, thus a major pain management strategy...K.Kemper MD
Stress, anxiety relief is possible

Before

After...
Integrative Medicine

Define IM: Relationship based care that combines conventional medicine and complementary therapies (IM)

- Mind body: yoga, breath work, hypnosis
- Biofeedback, Mindfulness, T’ai chi, Qigong

- Energy: Acupuncture, Reiki
- Therapeutic Touch, massage
- Though may considered Manipulative therapies

- Herbals: Herbs, Aromatherapy (though may be Mind Body)
Effective? Safe?

– What therapy?
– For whom?
– For what condition? (cancer, colds)
– Under what circumstances?
– For what desired outcome?

When? immediate versus long-term

Kemper. Arch Dis Child, 2001
Ethical Challenges in Integrative Medicine

• Needs to be increased exposure in pediatric education to IM regarding safety/efficacy

• Scope of practice, licensing, and credentialing of IM practitioners may be difficult to ascertain

• Possible concerns regarding safety and liability regarding IM therapies and therapists

• Cost/benefit
Complementary Health Questionnaire

National Center for Complementary and Integrative Health (NCCIH), part of the National Institutes of Health, and by the Centers for Disease Control and Prevention’s National Center for Health Statistics (NCHS). 2007, 2012, 2017

The 2017 NHIS survey is the most current and reliable source of information on the use of specific complementary health approaches by U.S. adults and children. The survey data suggest that more people are turning to mind and body approaches than ever before, and the research we support at NCCIH is helping to determine the impact of those approaches on health,” said David Shurtleff, Ph.D., Acting Director of NCCIH
NIH/NCCIH 2017 Data

• Yoga was the most commonly used complementary health approach among U.S. adults in 2012 (9.5 percent) and 2017 (14.3 percent). The use of meditation increased more than threefold from 4.1 percent in 2012 to 14.2 percent in 2017.

• 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.

• There was no statistically significant difference in the use of a chiropractor between 2012 and 2017 (3.5 percent and 3.4 percent, respectively).

• 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).

• Non-Hispanic white children were more likely to have used yoga and chiropractor in the past 12 months than non-Hispanic black children.
NOTE: 30-70% of children with chronic, recurrent and life threatening diseases use some form of CAM (2012 data has not significantly changed since 2007)


Impacting The Gate: Integrative Medicine Pain ‘Top Down’ Modulation Assist Pain, anxiety, sleep
Specific Integrative Modalities

- Hypnosis
- Biofeedback
- Massage
- M technique
- Aromatherapy
Definition: Hypnosis

Hypnosis:
An altered state of awareness usually but not always involving relaxation which includes highly focused attention (athletes, musicians, actors: AKA: being in the zone)
How to Incorporate Hypnosis

• Medical setting already conducive for “trance”
• Importance of Language i.e. How do you feel, What can I do to make you more comfortable? Avoid the word Pain if possible
• Encouragement: validate patient’s efforts ie Thank you for holding your breath so long. Thank you for keeping your arm so still, etc
• Key phrases: “Allow a Slow Deep in-breath with your belly allow for wonderful relaxation...good job”
• “As you breathe out you can easily “let go” of anything that is not helpful right now”
  “You are doing this just right”
Hypnosis Technique

- Establishing **Rapport**/Listening/Language
- Mindful of Developmental Stage of Patient
- All Hypnosis is **Self** Hypnosis
- Six Stages: *Fluid in Pediatrics*
  - Introduction
  - Induction
  - Intensification
  - Therapeutic Suggestion
  - Re-Alerting
  - Debriefing
Hypnosis with Infants, Toddlers, and Young Children

Tactile: massage, rubbing, stroking
*(let me kiss your ‘boo boo’ and ‘make it better’ Hypnotic Suggestion)*
Kinesthetic: moving, rocking
Auditory: singing, rhyming
Visual: pop up books, puppets, pinwheels, bubbles

**Go With The Child:**
Dr. Milton Erikson, M.D.
(psychiatrist)
Hypnotic Inductions and Techniques with School-Age Children

- Favorite Place Imagery, Adventure Imagery, Harry Potter, Magic Carpet
- Belly breathing, Helium Balloon, Bucket of Sand, Magnetic forces
- Control Switches
- Videogames, Television
Importance of Developmental Stage

Fantasy and identification with real and imagined characters

Increasing self-awareness
Contraindications For Hypnosis

• Ignoring underlying disorder
• Used for fun or entertainment
• The problem is more effectively treated with another modality
• Patient is psychotic, acutely depressed
• Patient (child) does not want to engage in hypnosis (but parent wants them to)
• It should be implemented by a trained therapist, health care provider within their competency
Hypnosis Myths

• Patient is under control of the hypnotherapist

• Patient is unaware of surroundings and/or activities around him/her

• Symptoms are masked

• Patient can be “forced” to do things they don’t want

• Hypnosis is sleep
Hypnosis

PET scans propose hypnosis may decrease discomfort by changing the processing at anterior cingulate cortex (limbic emotional distress). There was no change in somatosensory cortex. Thus patients may ‘register’ pain but can shift from emotional distress associated with pain. (Rainville 1997)

Hypnosis can decrease discomfort by decreasing anxiety

Anxiety potent predictor of pain

Anxiety increases need for medications and length of procedure such as in radiology suite
Hypnosis Evidence Adult

Dr Elivira Lang’s Studies: RCT over 700 adult patients

40% reduction in the claustrophobia non-completion rate in a large private practice MRI group translated into an annual savings of more than $120,000

Interventional radiology saved an average of $338 per case due to shorter procedure times, fewer complications, and faster recovery.

Review by Jensen (2007) et al: hypnosis for chronic pain in adults revealed significant decrease in pain perception which persisted for months in some patients. Rec further studies with larger sample size/’improved’ control needed
Effectiveness of Hypnosis for Post-operative Pain Management of Minimally Invasive Thorascoplc Approach to Repair Pectus Excavatum: Retrospective Analysis” Renee C.B. Manworren, PhD, APRN, BC, PCNS-BC , Eric Girard, MD, Ana Maria Verissimo, MD, Sandra Riccardino, RN, Kimberly A. Ruscher, MD, Richard Weiss, MD, Donald Hight, MD
Pediatric Surgical Nursing Vol 4, Issue 2, April 2015
Pectus excavatum pre op
Post op Nuss procedure:
Retrospective study with 22 patients who had Nuss procedure for pectus excavatum repair. 8 of 22 had pre and post op hypnosis. No difference in mean pain scores, no difference in hospital stay.

Statistically significant less morphine use in hypnosis group. P=0.012
Hypnosis Post op video
Hypnosis Teaching Organizations

- American Society of Clinical Hypnosis (ASCH)
  www.asch.net

- National Pediatric Hypnosis Training Institute (NPHTI)
  www.nphti.org

- Society for Clinical and Experimental Hypnosis (SCEH)
  www.sceh.us

- New England Society Clinical Hypnosis (NESCH)
  www.nesch.org
Biofeedback
Biofeedback

•  *Peripheral or Somatic Biofeedback*

  EMG (muscle tension)

  Skin temperature (mood rings, ‘Bio-dot’ Charles’ law Hand Boiler)

  Heart rate variability (approximate ANS resilience)

  Respiration (diaphragmatic movement, Hoberman sphere)

  Skin Conductance

•  *Neuro-feedback: EEG (Brain wave)*
Biofeedback Goals and Objectives

- Used for pain, stress, and anxiety as a self-regulation strategy
- In essence, Biofeedback used to measure and ‘feed back’ information about physiology and modulate for desired outcome
- Learn to control an external signal Top down modulation
- Learning to use internal sensations and cues, therapist is continually processing this with patient so eventually will not need equipment
- Strong treatment effect that persists for over 12 months after training

Allen Pediatr Ann, 2004
Kaushik R. Complement Ther Health Med, 2005
Trautman. Cephalgia, 2006
Nestoriuc. Pain, 2007
Heart Rate Variability (HRV)

2.5 seconds of heart beat data

70 BPM: 0.859 sec.
76 BPM: 0.793 sec.
83 BPM: 0.726 sec.
Quick Coherence: *Heart focus, Heart breathing, Heart Feeling*

**Emotions and the Heart**

- Frustration
- Appreciation
Biofeedback Goals and Objectives

Garden game biofeedback at baseline with black and white screen
• As patient uses his/her relaxation strategies which always begins with slow
depth ‘belly breaths the screen changes colors, images/sounds appear
• Providing **positive feedback** of improved HRV, and balance of autonomic
nervous system
• Allows patient’s recognition of his/her Mind Body connection in real time
Smartphone Apps for Self-Regulation

Many others...
Biofeedback References and Resources


- www.heartmath.com
- www.heartmath.org
- www.aapb.org
- www.stresseraser.com
- www.bcia.org
- www.stens-biofeedback.com
- www.wildDivine.com
“Gentle touch and beautiful smells can cross barriers”
Jane Buckle RN, PhD
Author: Clinical Aromatherapy; Developed M Manual Hand Massage
Brief History of Massage

• 1500 -500 BCE massage was practiced in India and Southeast Asia within the healing discipline of Ayurveda
• In China 3000 BCE massage was part of Traditional Chinese Medicine
• Egyptian tomb paintings showed images of massage treatments
• Indeed numerous cultures in Africa, India, South Pacific and South America use massage for their infants on a daily basis

The use of hands, as a tool to show friendship, to comfort and heal the ill, to express love and tenderness, to calm and stimulate the child, is as old as life itself.
-Bernard Gunther
Connecticut Children’s In-patient Massage Therapy program

- The generosity of **Friends Adopt a Program** initiated our Pediatric Integrative Medicine Program Massage therapy began in 2010 (Drs Neil Schechter, Bill Zempsky, Nancy Bright RN) though ‘*sporadic*’
- Resumed April 2015 : 2 dedicated LMT’s contracted from Hartford Hospital’s IM Program Cheryl, Eric and John
- **Philanthropically funded Mon/Tues 2-5 PM; Wed/Thur 5-8 PM** (evening hours to assist families who couldn’t be present during the day)
Effects of Massage

- Different types massage: Swedish massage, Rolfing (deep tissue), Craniosacral (gentle)
- Difficult to incorporate a ‘control’ massage, blinding, small sample size, maintain uniformity
- Mechanism of action presumed to be increased parasympathetic response as seen improving heart rate variability
- Possibly influence ‘Gate’ modulation as massage pressure on rapid A delta fibers influences to close gate of slower C pain fibers (Kuttner p 211)
- Increase in serotonin from massage thereby affecting pain

Effect of massage therapy

• Field (1997) et al studied daily 15 min massage by parent to their children with JRA for 1 month vs relaxation control. Children and parents reported less pain at f/u.

• Hernandez-Reif (2001) studied impact massage prior to burn dressing changes vs control. They found minimal distress in patients pre treated with massage.

• Routine in many NICU’S – promotes physical growth & the development of the nervous system

• New research emphasizes this fragility especially untoward effects of overstimulation and the lack restorative sleep for the newborn
Effects of Massage

- Adult: **Decreases anxiety** & depression
- Adult: Relieves tension headaches
- **Relaxation for sleep initiation**
- Possible benefit in sub acute Sickle Cell crisis in children & adolescents
- Massage used to promote relaxation, decrease pain attributed to muscle spasms, tense muscles (Beider 2007) (Tsao 2007)
- Anecdotal pre/post massage sessions Connecticut Children’s
NICU Massage Therapy

• Improved autonomic stability as measured by heart rate variability
  
  – New research emphasizes this fragility especially untoward effects of overstimulation and the lack of restorative sleep for the newborn
  
  • 17 massage  20 control masked randomized longitudinal study. LMT provided massage or control twice per day for 4 weeks. Weekly HRV analyzed. HRV improved in massage infants but not in control. Preterm males greater improvement than females. (p<0.05). By the end of the study massaged infant’s HRV measurements were approaching those of full term infants.
Autism and Massage

• Research limitations: few RCT, small sample size, inadequate control, poor follow up measure, ‘high risk bias’

• Re sensory hypo/hypersensitivity symptom criterion for ASD DSM-5

• Anecdotal CCMC M-technique Manual Hand Massage-

• Qigong massage: massage from head to foot following acupuncture channels, 15 min
  – Intervention group improved sensory impairment and improved Vineland Daily Living and Socialization vs control (13 patients)


M–Hand Massage Technique Developed By Dr. Jane Buckle: Evidenced Based

Three gentle repetitive strokes/thought to elicit Relaxation Response used Hospice/NICU

4 Hour course M Manual Hand/Foot massage

I was trained by Karen Wexell RN Uconn Toxicology/Regional Representative Holistic Nurses Association

I use this technique in almost EVERY patient encounter with ‘Aromatherapy’ cream-patient selects or their own
What is clinical aromatherapy?
Clinical aromatherapy (or “therapeutic use of essential oils”) is the use of essential oils to promote balance and well being of Mind Body Spirit
Aromatherapy branch of Herbal Medicine

What is an essential oil?
Essential oils are volatile, highly concentrated plant extracts using variety of plant components: flowers, leaves, roots, seeds, bark, sap depending on the EO. True EO’s via steam distillation or expression. EO’s are lipophilic thus emergency wash with milk (fat content) EO’s have different chemical structure that assist with why/how it can be used.
Essential oils have been used for healing for thousands of years in many cultures
Essential Oils

- Sleep
- Stomach discomfort
- Antimicrobial action
- Anxiety
- Relaxation
- Stress

Permission by Laura Miele RN
Aromatherapy

• Olfaction of EO’s may impact 5 parts of olfactory cortex: hypothalamus, thalamus, hippocampus and amygdala
• EO blends are selected depending on patient’s needs
• Research suggests some blends assist sleep, anxiety, pain relief, mood, skin inflammation/irritation, though more quality research is needed
• Recall Integrative Medicine emphasizes individual patient and not ‘symptom’ in ‘isolation’
• Do not apply undiluted EO’s on skin
• Caution in peds/elderly: ‘Natural” does not equal SAFE nor product superior ‘Quality’
Our purpose in life is to find our gift, perfect it, and give it back to others.

David Wiskott

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**Essential Oils consider in Palliative Care**

*Allow patient to choose if possible*

**Uplifting:** Bergamot, Frankincense, Angelica, Lavender, Basil, Neroli, Ylang Ylang

**Sleep:** Marjoram, Lavender, Petitgrain, Sandalwood

**Nausea:** Peppermint, Spearmint, Ginger, Cardamon

**Other:** Cocoa absolute inhaler +/− Peppermint
Anxiety use of Essential Oils:
per Dr Buckle curriculum, Kathy Duffy RN instructor
Cananga odorata: ylang ylang
Chamaemelum nobile: Roman chamomille
Citrus aurantium var. amara fol :petigrain
Citrus bergamia: bergamot
Citrus reticulata: mandarin
Ocimum basilicum: European basil
Pelargonium graveolens: geranium
Lavandula angustifolia: True lavendar
Cupressus sempervirens: cypress

Curriculum essential oil
Distributors:
Sun Rose Aromatics
Nature’s Gift
Appalachian Valley
Florihana
(of course there are many other distributors of EO)
Aromatherapy Texts

Aromatherapy Course Health Professionals R.J.Buckle Associates
4 modules over 12 months. Instructor Kathy Duffy LPN, CCAP
It is important to Promote **Self Care** ....

www.ahna.org
info@ahna.org
Course Description
The Power of Nursing is a 15-hour elective course that utilizes discovery model guidelines for nursing students and graduate nurses consisting of five sessions optimally spaced two weeks apart. Each three-hour session is divided into a large-group and small-group experience. Both course directors and nurses recruited from nursing school faculty and the larger nursing community facilitate small groups. The course is a seamless process with each session building upon the insights and content of the previous session. The five session topics are:

Session 1: Remembering Authenticity and Wholeness
Session 2: Disappointment, Loss and Grief: Experiencing Your Healing Presence
Session 3: Discovering Your Healing Lineage and Personal Healing Qualities
Session 4: The Courage to Make Your Power and Perspective Visible
Session 5: Calling and Commitment: Finding Your Voice, Living Your Values

Mary Pat Thomas, MS, RN, AHN-BC, CHTP,
Director of the Power of Nursing: mary.p.thomas@wright.edu
Regulations (?) Herbals, Suppl: Natural does not always equate with ‘safe’

- WHO 80% still rely herbals primary healthcare
- EU (European Union) premarket gov approval herbal
- Canada herbal pre approval ‘Natural Health Products’
- US FDA: herbals and dietary suppl as food products thus less stringent than prescription and OTC drugs
- Dietary Supplement Health and Education Act 1994 and manufacturer guarantee suppl/herbal pure/safe
- Not obligated report adverse to FDA
- *If product therapeutic efficacy* must have data
- Since 2007, new regulations ‘current Good Manufacturing Practices’ (cGMP)
- *Reliable Sources* are in reference section of this talk
A Sample of Dr Ana’s ‘Tools’

Breathing buddies

Hoberman sphere

Hand boiler

Timers

Sand toy

GLITTER CALMING JAR!
Stress Reduction
Have fun helping your child/patient/family create their own ‘Tool Box’ of coping strategies.
The greatest discovery of my generation is that human beings, by changing the inner attitudes of their minds, can change the outer aspects of their lives.

William James
Pediatric Integrative Medicine Texts
Pediatric Hypnosis Reference Texts

Culbert T, and Olness K. Integrative Pediatrics, Oxford University Press, 2009
Zeltzer, L. and Schlank C. Conquering Your Child’s Chronic Pain, Harper Collins, 2005
Zeltzer, L. and Schlank C. Conquering Your Child’s Chronic Pain, Harper Collins, 2005
Resources on Herbs and Dietary Supplements

- Natural Medicines Comprehensive Database: http://www.naturaldatabase.com/
- ConsumerLabs: http://www.consumerlab.com/
- Natural Standard http://www.naturalstandard.com/
- NIH NCCAM and OCCAM

Source
Kathi Kemper, MD
Dietary Supplements: Background Information

Office of Dietary Supplements • National Institutes of Health

Table of Contents

What is a dietary supplement?
What is a new dietary ingredient?
Are dietary supplements different from foods and drugs?
What claims can manufacturers make for dietary supplements and drugs?
How does FDA regulate dietary supplements?
What information is required on a dietary supplement label?
Does a label indicate the quality of a dietary supplement product?
Are dietary supplements standardized?
What methods are used to evaluate the health benefits and safety of a dietary supplement?
What are some additional sources of information on dietary supplements?

What is a dietary supplement?

As defined by Congress in the Dietary Supplement Health and Education Act (http://www.fda.gov/opacom/laws/dshea.html#sec3), which became law in 1994, a dietary supplement is a product (other than tobacco) that

- is intended to supplement the diet;
- contains one or more dietary ingredients (including vitamins; minerals; herbs or other botanicals; amino acids; and other substances) or their constituents;
- is intended to be taken by mouth as a pill, capsule, tablet, or liquid; and
- is labeled on the front panel as being a dietary supplement.
Integrative Medicine Resources

• AAP Section of Complementary and Integrative Medicine
• https://nccih.nih.gov (National Center Complementary and Integrative Health)
• COCHRANE Review
• The American Holistic Medical Association
• https://www.consumerlab.com
• www.naturaldatabase.com
• http://www.imconsortium.org Academic Consortium Integrative Medicine and Health
• Professional Journals: Pediatrics, Peds in Review, Contemporary Pediatrics, Ped Clinics North America
• www.liebertpub.com/.../alternative-and-complementary-therapies Alternative and Complementary Therapies Journal
• https://integrativemedicine.arizona.edu
Pediatric Hypnosis Research


Sadaat H, Kain ZN. Hypnosis as a Therapeutic Tool in Pediatrics. Pediatrics, 2007;120:179-181


Pediatric Hypnosis Research


Pediatric Hypnosis Research

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Zeltzer, L. and Schlank C. Conquering Your Child’s Chronic Pain, Harper Collins, 2005


Kemper, K. The Holistic Pediatrician, Harper Collins, 2002
Pediatric Integrative Medicine Articles


Biofeedback References and Resources


- [www.heartmath.com](http://www.heartmath.com)
- [www.heartmath.org](http://www.heartmath.org)
- [www.aapb.org](http://www.aapb.org)
- [www.stresseraser.com](http://www.stresseraser.com)
- [www.bcia.org](http://www.bcia.org)
- [www.stens-biofeedback.com](http://www.stens-biofeedback.com)
- [www.wildDivine.com](http://www.wildDivine.com)