Disclaimer

- I have no relevant financial relationships with the manufacturers of any commercial product(s) or provider(s) of commercial services discussed in this CME activity.

- I do not intend to discuss an unapproved/investigative use of a commercial product/device in my presentation.

- I am an author of three books:
  - HarperQuill, “The Holistic Pediatrician”
  - AAP, “Mental Health Naturally”
  - XLibris, “Addressing ADD Naturally”
  - Twin Harbor Press, “Authentic Healing”
Rationale

- Pediatricians are confronted daily with questions about abdominal pain
- Many families are interested in non-drug approaches to treatment
- Diet and stress are leading contributors to abdominal pain, so let’s focus on those
Objectives

- Describe an often overlooked mineral supplement that can help ease abdominal pain
- List three useful herbal remedies for GI complaints; 1 specific for IBS
- Use simple mind-body techniques to manage stress-related abdominal pain
- Explain a FODMAPS diet and its effectiveness in treating IBS
Gut-Brain Axis + Microbiome

All gut function (motor, sensory, and secretory) are controlled by intrinsic and extrinsic neural systems.

These systems interact in a bi-directional network between the brain and gut => brain-gut axis.
Integrative Approach – Patient-Centered Care

- Biofield
- Biomechanical
- Biochemical
- Lifestyle

Personalized Care
Integrative Therapy: Foundations
Healthy Habits in a Healthy Habitat (H4)
FODMAP Diet – restriction of foods containing fermentable carbohydrates; changes gut flora*

Herbs:
- Chamomile (tea)
- Ginger for nausea (candied, tea, capsules)
- Licorice (tea)
- Artichoke extract – open trials
- Peppermint, enteric coated*
FODMAP Diet

- Fermentable Oligo-Di-Monosaccharides and Polyols

No HIGH FRUCTOSE CORN SYRUP
## FODMAP Diet

<table>
<thead>
<tr>
<th>AVOIDS</th>
<th>OK to EAT</th>
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<tbody>
<tr>
<td><strong>Fructose</strong> (fruits, honey, HFCS)</td>
<td>Meat, fish, poultry, eggs</td>
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<tr>
<td><strong>Lactose</strong> (dairy)</td>
<td>Lactose-free milk; hard cheeses;</td>
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<tr>
<td></td>
<td>almond milk; rice milk</td>
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<tr>
<td><strong>Fructans/inulin</strong> (wheat, onion, garlic)</td>
<td>Nuts, but butters, seeds</td>
</tr>
<tr>
<td><strong>Galactans</strong> (beans, lentils, legumes, soy)</td>
<td>Wheat-free (or gluten free) grains</td>
</tr>
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<td></td>
<td>and flours; Cheerios, rice</td>
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<tr>
<td><strong>Polyols</strong> (sorbitol, mannitol, xylitol, maltitol; avocado, apples, apricots, cherries, dates, figs, mango, nectarines, papaya, peaches, pears, plums, watermelon)</td>
<td>Bananas, berries, cantaloupe, grapes, citrus, kiwi, pineapple, rhubarb</td>
</tr>
<tr>
<td><strong>Artichokes</strong>, asparagus, beets, leeks, broccoli, brussel sprouts, cabbage, cauliflower, fennel, green beans, mushrooms, okra, snow peas</td>
<td>Bamboo shoots, peppers, cukes, carrots, celery, corn, leafy greens, pumpkin, potatoes, squash, tomatoes, yams, zucchini</td>
</tr>
</tbody>
</table>
FODMAP – Pediatric Research

- Texas Children’s Hospital, RCXT
- N=33 children with Rome III IBS completed 1 week baseline, then Randomized to SAD vs FODMAP for 5 days, then 5 day wash-out, then other diet for 5 days
- FODMAP-> Less abdominal pain compared with baseline and SAD; changes in microbiome

Mineral for Abdominal Pain
Mineral for Abdominal Pain with constipation?

- **Magnesium**
  
  - About 50% of school-age kids and teens eat < RDI
  
  - Consequence – constipation, easily stressed and anxious; increased risk of asthma
  
  - Dose – about 400 mg daily (about the RDI for teens)
  
  - Side effect of excess – diarrhea

Peppermint, enteric coated (Pepogest)

- Spasmolytic
- Meta-analysis of 12 trials in adults showed fiber and peppermint oil more effective than placebo for IBS
- Pediatric RCT of 42 children with IBS, those given ECPO for two weeks, 75% had less pain
- 2014 meta-analysis: ECPO is safe and effective for IBS

Probiotics

- Most studied, *Lactobacillus* and *Bifidobacteria*
- 2011 meta-analysis of pediatric studies using Culturelle® product (LGG) showed significantly better than placebo for IBS
- 2015 meta-analysis of 24 trials and 1793 patients found significant decrease in abdominal pain, bloating, gas
- 2015 meta-analysis of 6 trials using *Lactobacillus*, GOOD, SAFE for IBS symptoms
- 2016 Pediatric RXT of 3 bifidobacteria strains improved abdominal pain in those with IBS

Didari T. *World J Gastroenterol*, 2015
Horvath A. *Aliment Pharmacol Ther*, 2011
Tiegun B. *Intern Med*, 2015
Integrative Therapy: Foundations
Healthy Habits in a Healthy Habitat (H4)
Mind-Body approaches

- Target **STRESS** and **COPING**
- Cognitive-behavioral therapy, unpacking thoughts, emotions, and sensations
- Peer and family support groups
- Psycho-education

-----------------------------------------------

- Hypnosis, guided imagery
- Biofeedback
- Sitting meditation
- Moving meditation
Hypnosis

- Hypnotic suggestions influence inflammation

  - “This is poison ivy” leads to dermatitis

  - “This is an oak leaf” leads to no reaction

  - Since 1952, reports that hypnosis can significantly improve symptoms of ichthyosis vulgaris, eczema, hyperhidrosis, warts, alopecia, lichen simplex, pruritis; asthma, hay fever; pain

  - Mechanisms? Decrease IL6; more work needed
Hypnosis for IBS

- Dobbin, et al (2013, UK) RCT of hypnotherapy vs. biofeedback for IBS; 3, 1-hour sessions over 12 weeks – both effective in improving refractory IBS; biofeedback slightly better

- Lowen, et al (2013, Sweden) fMRI during rectal distention in normal and IBS patients; hypnosis normalized central processing of visceral stimuli

- Moser, et al (2013, Austria) 100 refractory patients RCT 10 weekly sessions within 12 weeks of gut-directed hypnotherapy or standard care; 12-week improvement: 61% vs. 41%, P=0.05; 15 month improvement: 54% vs. 25%, P<0.01
Gut-Directed Hypnotherapy for IBS or FAP in Children

- Systematic review of 3 RCTs, 2 using individualized therapy and 1 using recordings. ALL showed statistically significant improvement; 2 showed decreased school absence (Rutten JM. Arch Dis Child, 2013)
Hypnosis for IBD

- Controlled trial: 25 patients with UC; 8 control
  - 50 minute session of hypnotherapy for 17
  - Decreased IL-6 by 53% (P=0.001)
  - Decreased histamine by 35% (P=0.002)
  - Decreased IL-13 by 53% (P=0.003)
  - Decreased mucosal blood flow 18% (P=0.0004)

Autogenic Training for IBS

- My feet and legs are heavy and arm.
- My hands and arms are heavy and warm.
- My heartbeat is calm and regular.
- My breathing is easy and free.
- My belly is soft and relaxed.
- My forehead is cool.

[link](http://go.osu.edu/guidedimagerypractices)

Shinozaki M. *Appl Psychophys Biofeedback*, 2010; RCT of AT for IBS: decreased symptoms 82% vs. 30%, P<0.05
Apps and MP3s for Hypnosis

- **MP3**
  - OSU CIHW (http://go.osu.edu/guide_dimagerypractices)
  - HealthJourneys

- **Apps**
  - IBS Hypnosis ($3.99)
  - Alleviate IBS by iCan Hypnosis ($4.99)
  - Manage IBS Now ($0.99)
Biofeedback

- Clinically works: headache, asthma, abd. pain
- Functional dyspepsia; RCT of 20 children with 10 sessions of BFB; + results for pain (Schurman, *J Pediatr Psychol*, 2010)
- HRV biofeedback leads to increased vagal tone and decreased hsCRP (P=0.02) (Nolan RP, *J Gen Intern Med*, 2010)
Biofeedback

- Local (GI tract) vs. General vagal tone
- Anorectal – requires professional training
- Thermal (mood ring)
- Heart rate variability (Inner Balance by HeartMath)
- Respiratory guided (RespErate)
- Combination: Journey to the WildDivine/Healing Rhythms
Mindfulness Meditation

- Many studies showing MBSR helpful for
  - Pain (Chiesa A. J Altern Complement Med, 2011)
  - Stress (Chiesa A, J Altern Complement Med, 2009; Pbert L. 2012)
  - Inflammation (Rosenkranz MA, Brain Behav Immun, 2013; 27(1): 174-84)
  - PTSD (Kim SH. J Investig Med, 2013)

- Lovingkindness meditation (metta) helpful for
  - Pain (Carson JW, J Holist Nurs, 2005)
  - PTSD (Kearney DJ, J Trauma Stress, 2013)
Mindfulness Meditation

- Free MP3
  - http://Go.osu.edu/mindfulness
  - UCLA; UCSD
- Apps
  - HeadSpace
  - Mindful.org
  - The Mindfulness App ($1.99)
  - The Mindfulness App2 ($1.99)
  - Mindfulness Meditation ($1.99)
Relaxation Response

- Clinically, RR helpful for IBS (Keefer L, *Behav Res Ther*, 2002)
Relaxation response

- **FREE MP3**
  - [http://go.osu.edu/relaxationresponse](http://go.osu.edu/relaxationresponse)
  - Benson-Henry Institute for Mind-Body Medicine at MGH
  - Dartmouth College downloads

- **Apps**
  - Relaxation Response Training (free)
  - Breathe2Relax
Yoga

- In a US survey of 67 adolescents with IBD,
  - 62% used prayer, 40% used relaxation,
  - 21% used imagery, 8% used meditation,
  - < 10% used yoga to improve quality of life;

- Those with more severe disease and worse quality of life more willing to consider mind/body therapies (Cotton S, Inflamm Bowel Dis, 2010)

Yoga, stress, and inflammation

- Yoga *10 days in pts w/chronic inflammation*
  - Decreased cortisol within 10 days
  - Bet-endorphin increased
  - Decreased IL6 (Yadav RK, *J Altern Compl Med*, 2012)
- Yoga in women: 25 novices and 25 experts
  - Boosted positive affect; no acute effect on IL6 or CRP with one session. However,
  - IL6 41% higher in novices than experts
  - Experts produced less IL-6 in response to stress than novices (less inflammatory response to stress with practice)
Safety and costs

- High margin of safety for most mind-body interventions (rare: anxiety, schizo-thoughts, hyperventilation, asthma flares)
- Low risk of mind-body/drug interactions
- Cost of professional time
- Practice time/guilt (REFER!)
Suggested Changes

- Recommend: FODMAPS Diet
- Enteric Coated Peppermint
- Probiotics (Lactobacillus)
- Mg if constipated
- Manage stress (psychologist/MSW)
  - CBT, groups
  - Hypnosis/guided imagery/autogenic training
  - Biofeedback – users choice
  - Meditation – Mindfulness or Relaxation Response
  - Yoga
Online resources

- Compare Herb and Supplement products
  - ConsumerLab.com
  - http://herbs-supplements.osu.edu
- Check out Apps!
- FREE Mind-body Practices recordings
  - http://go.osu.edu/guidedimagerypractices
  - http://go.osu.edu/mindfulness
  - http://go.osu.edu/heartpractices
  - http://go.osu.edu/relaxationresponse
- Online course on mind-body skills
  - http://mind-bodyhealth.osu.edu
Selected References

- Sibinga EM, Kemper KJ. Complementary, holistic, and integrative medicine: meditation practices for pediatric health. *Pediatrics in Review*, 2010;Dec; 31 (12): e91-103