CAM Secrets: Transforming Functional GI Disorders

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Some examples….

- Relaxation techniques
- Herbal Medicine
- Massage therapy
- Chiropractic therapy
- Megavitamins
- Homeopathy
- Fecal microbial therapy
- Hypnosis
- CBT
- Biofeedback
- Acupuncture
- Art therapy
- Energy healing
- Lifestyle diets
- Medical cannabis

Some demographics….

- Women > Men
- Caucasians > other ethnicities
- Age group of 35-49 years old reported highest rates
- Correlation between income level and CAM use
- Correlation between education level and CAM use

Common conditions

- Neck and back problems
- Depression
- Anxiety
- ***Digestive problems***
- Arthritis
- Allergies
- Headaches
- Fatigue
- Hypertension
- Terminal illness
- Chronic Pain

Treatment	PROS	CONS	Comments
Peppermint Oil	Improves global symptoms Commercially available (e.g. IBGard™ – non-prescription, ultrapurified peppermint oil)	Side effects: diarrhea, nausea, vomiting, allergic reactions, atrial fibrillation, dyspepsia, GERD	Acts by direct blockade of smooth muscle calcium channels (esophagus, distal stomach and duodenal bulb) Allosteric effect on 5-HT_3 receptor *Low quality of evidence*
Turmeric	Improves symptom severity via anti-spasmotic effect Commercially available	Side effects: nausea, vomiting, fatigue, headache and diarrhea	Increases GI motility and activates hydrogen producing bacteria in the colon *Very low quality of evidence*
Cannabis	Presumed analgesic effect	Many adverse effects including hepatotoxicity, hyperemesis and paradoxical exacerbation of abdominal pain, sedation	Not consistently available with variable dosing *Very low quality of evidence*

***Deutsch J and Hass DJ. Am J Gastroenterol*. 2020;115(3):350-364.**
***Chey et al. JAMA*. 2015;313(9):949-958.**
***Ford et al. N Engl J Med*. 2017;376(26):2566-2578.**

Treatment	PROS	CONS	Comments
Aloe Vera	Anti-inflammatory and analgesic effect and can also act as a laxative Commercially available	Side effect: diarrhea Can decrease absorption of certain medications	Dosing ranges from 1 tablespoon to 1/3 cup daily *Very low quality of evidence*
STW-5 (Iberogast™)	Improves global symptoms and abdominal pain Commercially available	Hepatoxicity, increased bleeding, altered absorption of medications	Promotes fundic relaxation and antral contraction *Very low quality of evidence*
Glutamine	Improves global IBS symptom severity Commercially available	Side effects: abdominal pain and bloating	Restoration of normal intestinal permeability *Very low quality of evidence*
Beberine	Improvement in diarrhea, abdominal pain and urgency Commercially available	No reported adverse effects but may interfere with drug metabolism	Anti-nociceptive and anti-depressant *Very low quality of evidence*

***Deutsch J and Hass DJ. Am J Gastroenterol*. 2020;115(3):350-364.**
***Chey et al. JAMA*. 2015;313(9):949-958.**
***Ford et al. N Engl J Med*. 2017;376(26):2566-2578.**

ADVANCES IN IBS

Current Developments in the Treatment of Irritable Bowel Syndrome

Section Editor: William D. Chey, MD

When to Consider Acupuncture for Disorders of Gut-Brain Interaction

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Open

Meditation and Yoga for Irritable Bowel Syndrome: A Randomized Clinical Trial

Adrijana D'Silva, PhD[1], Deborah A. Marshall, PhD[1,2], Jeff K. Vallance, PhD[3], Yasmin Nasser, MD, PhD[4,5], Vidya Rajagopalan, MHA[4], Jessie H. Szostakiwskyj, MSc[6] and Maitreyi Raman, MD, MSc[1,4,5]

INTRODUCTION: **Delivered in person, yoga is effective in managing irritable bowel syndrome (IBS) symptoms. The evidence for efficacy, feasibility, and safety of virtually delivered yoga for patients with IBS is unknown.**

METHODS: **Adults diagnosed with IBS were randomized to either Hatha yoga intervention of 8 weekly online classes delivered virtually or an advice-only control group and assessed at baseline and postintervention. We used an unadjusted ANOVA to determine differences between and within groups on the primary outcome (decrease of ≥50 points in IBS Symptom Severity Scale [IBS-SSS]) and secondary outcomes (quality of life, anxiety and depression, fatigue, somatic symptoms, perceived stress, COVID-19 stress, and self-compassion). We assessed feasibility through recruitment and attrition rates, adherence, participant satisfaction, and safety (i.e., adverse events).**

RESULTS: **Seventy-nine people participated (mean age 45.4 years [SD = 14.0], 92% women, 20% attrition rate). IBS-SSS decreased significantly in the treatment group (Δ_{change} = 54.7, P = 0.028), but not in the control group (Δ_{change} = 22.6, P = 0.277). Fourteen patients (37%) in the yoga group reached a clinically relevant decrease of ≥50 points on the IBS-SSS postintervention compared with 8 patients (20%) in the control group (P = 0.242). No significant difference was found between groups in IBS-SSS score postintervention (P = 0.149), but significant differences in favor of the treatment group for quality of life (P = 0.030), fatigue (P = 0.035), and perceived stress (P = 0.040) were identified. The yoga program demonstrated feasibility. Intention to practice yoga decreased significantly in both groups from baseline to postintervention (P < 0.001). However, the decline in intention did not correlate with practice minutes.**

DISCUSSION: **Virtually delivered yoga is safe and feasible, and effective in reducing IBS symptoms. Based on the primary end point, the intervention was not superior to an advice-only control group.**

Irritable Bowel Syndrome

- Hypnotherapy has been proposed as an effective integrative therapy in the treatment of Irritable Bowel Syndrome. Through “gut–related imagery”, what percentage of patients report initial overall symptom improvement with this modality?

A. 10%

B. 40%

C. 60%

D. 80%

Irritable Bowel Syndrome

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C. 60%

D. 80%

GI DISORDERS

Effects of Gut-Directed Hypnotherapy on IBS in Different Clinical Settings—Results From Two Randomized, Controlled Trials

Perjohan Lindfors, MD[1–3], Peter Unge, MD, PhD[4,5], Patrik Arvidsson, PhD[2], Henry Nyhlin, MD, PhD[6], Einar Björnsson, MD, PhD[1], Hasse Abrahamsson, MD, PhD[1] and Magnus Simrén, MD, PhD[1]

The Effect of Hypnosis on Systemic and Rectal Mucosal Measures of Inflammation in Ulcerative Colitis

Joel E. Mawdsley, M.D.,[1] David G. Jenkins, M.D.,[1] Marion G. Macey, Ph.D.,[2] Louise Langmead, M.D.,[3] and David S. Rampton, Ph.D.[1]

AL GI DISORDERS

Mindfulness Training Reduces the Severity of Irritable Bowel Syndrome in Women: Results of a Randomized Controlled Trial

Susan A. Gaylord, PhD[1], Olafur S. Palsson, PsyD[2], Eric L. Garland, PhD[3], Keturah R. Faurot, PA, MPH[1], Rebecca S. Coble, BA[1], J. Douglas Mann, MD[4], William Frey, MS[5], Karyn Leniek, MD[1] and William E. Whitehead, PhD[2]

Is Hypnotherapy Equally Effective Self-directed at Home vs. with a Therapist?

- **"Long-term Follow-up of Gut Directed Hypnotherapy Self-Exercises at Home Using CD vs. Individual Therapy by Qualified Therapists In Children With Irritable Bowel Syndrome or Functional Abdominal Pain"**

Non-inferiority

  - 144 patients from previous RCT
  - 5.8 years of follow up
  - 80% CD group vs. 83% iHT group reported relief
  - Supports the use of low cost home treatment that can be widely distributed

R. Rexwinkel et al. Netherlands DDW 2019 Abstract1608

Clinical Gastroenterology and Hepatology 2023;21:3152–3159

FUNCTIONAL DISORDERS

A Randomized Parallel-group Study of Digital Gut-directed Hypnotherapy vs Muscle Relaxation for Irritable Bowel Syndrome

Sameer K. Berry,[1,*] Rani Berry,[2,*] David Recker,[3] Jeffrey Botbyl,[4] Lucy Pun,[5] and William D. Chey[6]

Comparison of Digitally Delivered Gut-Directed Hypnotherapy Program With an Active Control for Irritable Bowel Syndrome

Ellen J. Anderson, BNutSci, MDiet[1,2], Simone L. Peters, BSc (Psychophysiology) (Hons), PhD[1], Peter R. Gibson, MBBS(Hons), MD[1,2] and Emma P. Halmos, BNutDiet, PGradDipBSc, PhD[1,2]

INTRODUCTION: **Gut-directed hypnotherapy (GDH) treats irritable bowel syndrome (IBS), but its accessibility is limited. This problem may be overcome by digital delivery. The aim of this study was to perform a randomized control trial comparing the efficacy of a digitally delivered program with and without GDH in IBS.**

Am J Gastro 2025;120:440-448

Comparison of GDH Program With a Control for IBS

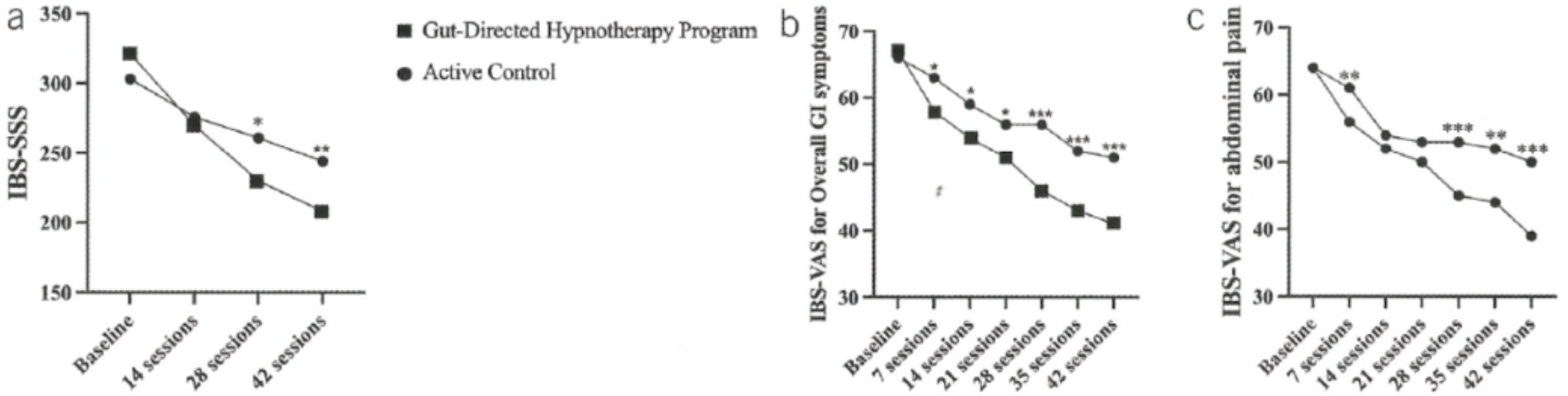

Figure 2. Median scores in participants with IBS receiving a 42-session intervention of the Gut-Directed Hypnotherapy Program or Active Control. (**a**) IBS-SSS; (**b**) Overall symptoms using a 100-mm VAS; (**c**) Pain using a 100-mm VAS. $^{*}P < 0.05$; $^{**}P < 0.01$; $^{***}P < 0.001$. GI, gastrointestinal; IBS, irritable bowel syndrome; IBS-SSS, IBS Severity Scoring System; IBS-VAS, IBS Visual Analog Scale.

Clinical Gastroenterology and Hepatology 2024;22:222–234

NARRATIVE REVIEWS

Charles J. Kahi, Section Editor

Development and Current State of Digital Therapeutics for Irritable Bowel Syndrome

Darren M. Brenner,[1] Amy M. Ladewski,[2] and Sarah Wimberly Kinsinger[3]

[1]Department of Surgery, Feinberg School of Medicine, Northwestern University, Chicago, Illinois; [2]Department of Digestive Health, Digestive Health Center, Northwestern Memorial Hospital, Chicago, Illinois; and [3]Division of Gastroenterology and Nutrition, Department of Medicine, Loyola University Medical Center, Maywood, Illinois

Table 2. Discussion Points for Introducing Brain–Gut Axis as a Rationale for Recommending the Treatment

Understanding the brain–gut relationship

There is a bidirectional relationship between the brain and the gut that powerfully influences GI pain perception, motility, and secretion. As a result of this brain–gut connection, stress and anxiety can prolong flares, slow recovery, and reduce quality of life.

Furthermore, many patients find it difficult to cope with IBS abdominal symptoms and pain.

Role of CBT and hypnotherapy

There are 2 evidence-based treatments that specifically target the brain–gut connection. These approaches provide short-term, skills-based psychological treatments specifically designed for IBS. Many patients will continue working with their mental health provider while also receiving BGBT, and these are not a substitute for mental health treatment.

- Gut-directed CBT helps to decrease IBS-related distress by focusing on education about the stress response and its relationship to GI symptoms. It also builds insight into the mental and behavioral responses to IBS symptoms.
- Gut-directed hypnosis is effective at reducing pain and has a calming effect on the gut by assisting the patient in achieving a deeply focused yet relaxed state that then provides posthypnotic suggestions for symptom reduction.

Digital BGBT options

The development of digital applications of brain-gut behavioral therapies has provided patients access to highly effective treatments in the comfort of their own homes and on their own schedule. There are currently 2 FDA-cleared digital treatments for IBS.

- Mahana IBS is a digital treatment using gut-directed CBT as well as addressing diet, lifestyle, and stress. Patients complete short daily 10-minute lessons over the 3-month program.
- Regulora is a digital application for gut-directed hypnotherapy that specifically addresses IBS-related pain. Patients commit to 7 self-administered 30-minute sessions every other week for 12 weeks.[64]
- Other non–FDA-cleared digital therapeutics include Zemedy for CBT and Nerva for hypnotherapy.

Internet-Delivered Exposure-Based Cognitive Behavior Therapy for Irritable Bowel Syndrome: A Clinical Effectiveness Study

Hugo Wallén, PhD[1], Brjánn Ljótsson, PhD[2], Perjohan Lindfors, MD, PhD[2,3], Erik Forsell, PhD[1], Hugo Hesser, PhD[4,5] and Cecilia Svanborg, MD, PhD[1]

INTRODUCTION: **Irritable bowel syndrome (IBS) is a common and debilitating disorder. When dietary and pharmacological interventions are not satisfactory, psychological treatment may produce good results. However, the access to such treatment is scarce, and therefore, it is of importance to make use of technical solutions. In this study, we wanted to investigate the real-world effectiveness of an Internet-delivered exposure-based cognitive behavior therapy (ECBT) for IBS and to replicate an earlier finding regarding the working mechanism of the treatment.**

METHODS: **A total of 309 consecutively recruited patients from the Internet Psychiatry Clinic in Stockholm received ECBT for 12 weeks. The patients' IBS symptoms, quality of life, avoidance behaviors, and gastrointestinal symptom-specific anxiety were monitored, and we used a bivariate cross-lagged panel model to investigate time-related change in symptoms and avoidance behaviors.**

Treatment	PROS	CONS	Comments
Cognitive Behavioral Therapy	Management of stress surrounding IBS symptoms One meta-analysis reported **NNT of 3** No reported adverse effects	Could be costly, but some insurance will cover	Appropriate for patients who report that stressors make GI symptoms worse ***High quality of evidence***
Gut-directed hypnotherapy	Overall symptom improvement of 50-80% One meta-analysis reported **NNT of 4** No reported adverse effects	Could be costly, but some insurance will cover	Mechanism of action unknown ***Moderate quality of evidence***

Deutsch J and Hass DJ. Am J Gastroenterol. 2020;115(3):350-364.
Chey et al. JAMA. 2015;313(9):949-958.
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Indications for Medical Marijuana

- **Malignancy**
- Glaucoma
- Parkinson's Disease
- HIV/AIDS
- Epilepsy
- Spinal cord injury/ Muscle Spasticity
- Cerebral Palsy
- Cystic Fibrosis
- **Cachexia**
- **Wasting Syndrome**
- Spinal cord injury
- PTSD
- **Crohn's Disease**
- **Ulcerative Colitis**
- Intractable Seizure Disorder
- Terminal Illness

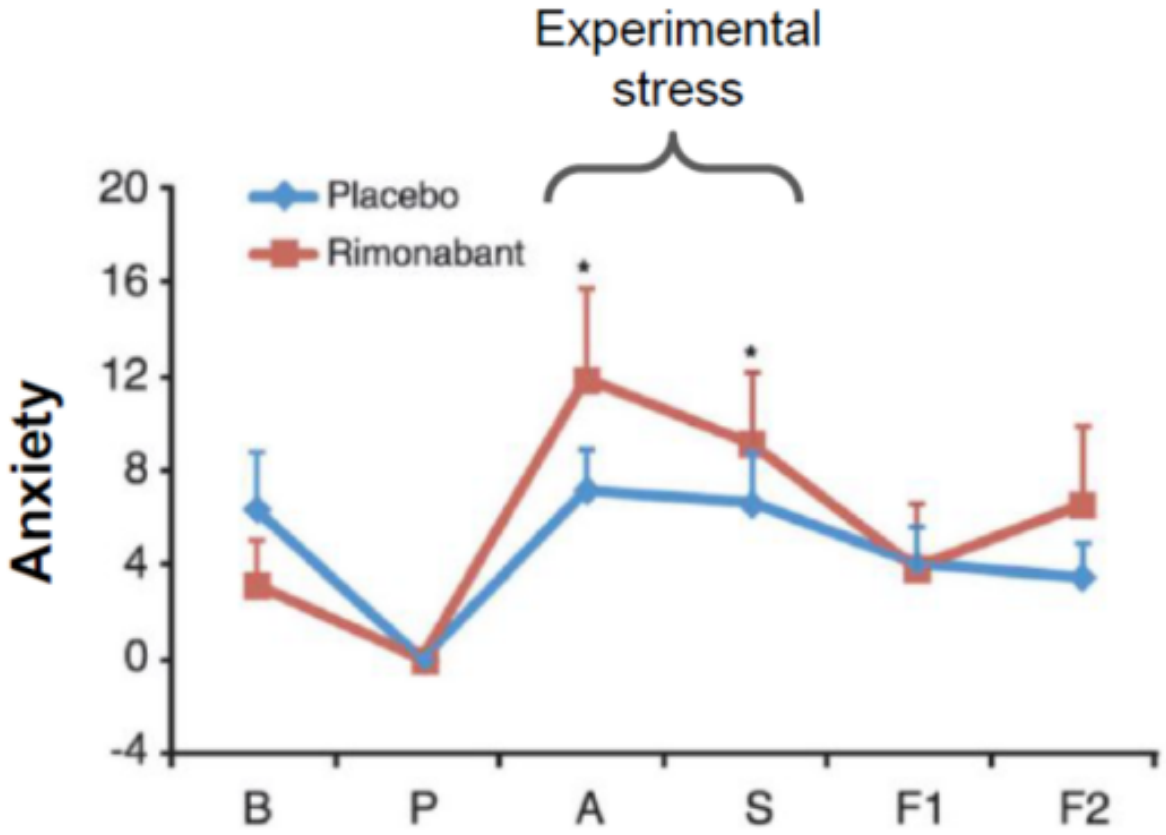
Endocannabinoid System

- Two main endogenous endocannnabinoids
  - Anandamide
  - 2-arachidonoylglycerol (2-AG)

- Two receptors: CB1 and CB2

- CB1 expressed principally in the enteric nervous system of the gut (submucosal and myenteric plexus) and also on mucosal epithelium.
- CB2 mainly expressed on surface of immune cells

Blocking CB_1 Receptor Increases Effects of Stress



(Bergamaschi, 2013, Hum Psychopharmacol)

The increase in anxiety from being placed in a stressful situation was ~50% higher after a single dose of rimonabant

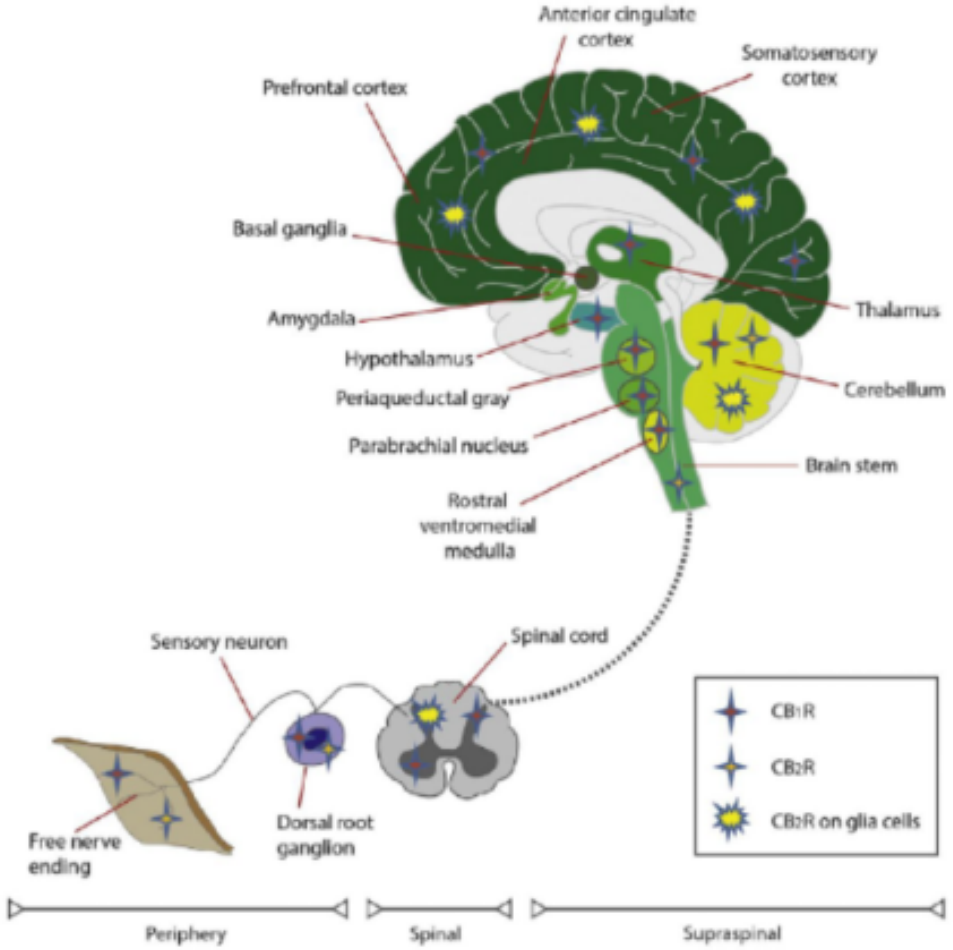
The opposite also occurs - augmenting CB_1 receptor activation decreases anxiety levels in a stressful situation

(THC: Childs, 2017, Drug Alcohol Depend ;
FAAH inhibitor: Mayo, 2020, Biol Psychiatry)

The ECS & Pain

- The CB_1 receptor is expressed in virtually every tissue involved in nociception and pain processing

(Sexton, 2016, Cannabis Cannabinoid Res)



(Starowicz, 2017, Adv Pharmacol)

Virtual Reality for Treatment of DGBI?

- Research indicates that VR reduces acute pain
  - Stimulates the visual cortex and engages other senses
  - Distracts the brain to limit the user's perception of pain
  - Prefrontal cortex redirects attentional bandwidth to the virtual environment
  - Diminished ability of the brain to attend to pain input

- VR also affects pain processing
  - Reduces the intensity of pain and emotional response
  - Same fMRI effects as hydromorphone

Lacy BE, et al. Gastro and Hep 2023

The Analgesic Effects of Opioids and Immersive Virtual Reality Distraction: Evidence from Subjective and Functional Brain Imaging Assessments

Table 1. Subjective Pain/Fun Assessments by Treatment Condition

Outcome variable	VR−/opioid−	VR+/opioid−	VR−/opioid+	VR+/opioid+
Worst pain intensity	8.28 (0.83)	5.94 (2.21)*	7.72 (1.86)	4.50 (1.87)*‡
Pain unpleasantness	8.56 (0.53)	5.33 (2.16)*	7.17 (1.60)†	4.05 (1.98)*‡
Time spent thinking about pain	8.72 (1.25)	4.56 (2.46)*	7.78 (1.79)	3.78 (1.72)*‡
Fun	0.56 (1.33)	6.56 (2.19)*	0.33 (0.50)	6.17 (3.04)*‡

Mean (SD) ratings for the primary (worst pain intensity) and secondary (pain unpleasantness, time spent thinking about pain, and amount of fun during the procedure) outcome measures for participants in each treatment condition ($n = 9$), including results of univariate ANOVA analyses.

VR = virtual reality distraction.

† $P < 0.05$ indicates difference between treatment group and control (VR−/opioid−) group.

* $P < 0.01$ indicates difference between treatment group and control (VR−/opioid−) group.

‡ $P < 0.01$ indicates difference between combined treatment (VR+/opioid+) group and opioid alone (VR−/opioid+) group.

Hoffman H et al. *Anesth and Analg.* 2007;105:1776

Slide courtesy of B. Spiegel, MD

RESEARCH ARTICLE

Virtual reality for management of pain in hospitalized patients: A randomized comparative effectiveness trial

Brennan Spiegel[1,2]*, **Garth Fuller**[1], **Mayra Lopez**[1], **Taylor Dupuy**[1], **Benjamin Noah**[1], **Amber Howard**[1], **Michael Albert**[1], **Vartan Tashjian**[1], **Richard Lam**[1], **Joseph Ahn**[1], **Francis Dailey**[1], **Bradley T. Rosen**[1,3], **Mark Vrahas**[4], **Milton Little**[4], **John Garlich**[4], **Eldin Dzubur**[1], **Waguih IsHak**[5], **Ital Danovitch**[5]

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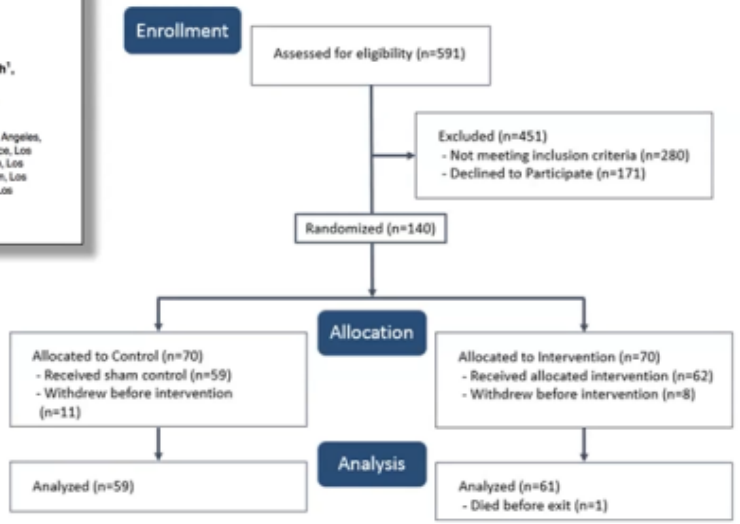
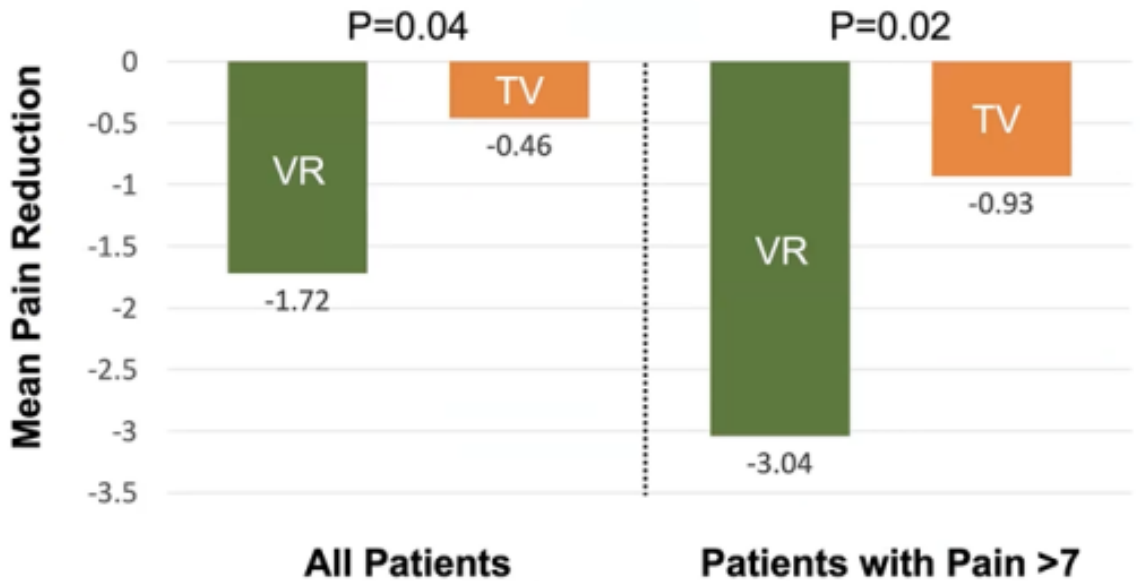


Spiegel et al. *PLOS ONE* 2019;14:e0219115



AJG The American Journal of GASTROENTEROLOGY

BRIEF COMMUNICATION: FUNCTIONAL GI DISORDERS

Virtual Reality Improves Symptoms of Functional Dyspepsia: Results of a Randomized, Double-Blind, Sham-Controlled, Pilot Study

Cangemi, David J. MD[1,a]; Montenegro, Marilia MD[1]; Spiegel, Brennan R. MD, MSHS[2]; Lacy, Brian E. MD, PhD, FACG[1]

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The American Journal of Gastroenterology ():10.14309/ajg.0000000000002492, September 01, 2023. | **DOI:**

Cangemi et al. *Am J Gastroenterol 2023* (in press)

VR: Promising Therapeutic of the Future?

- Implements the concepts of
  - Awe
  - Emotions
  - Escape

- VR changes autonomic nervous system response
- Modifies and adapts the brain to change how brain perceives body and data received from body

- Journal of Extended Medical Reality (JMXR)
- American Medical Extended Reality Association (AMXRA)

Conclusions

- Non pharmacologic therapies are emerging as a effective and impactful modality for DBGI disorders.
- CBT/Hypnotherapy have the most efficacy for IBS from a non-pharmacologic perspective.
- More data to emerge for medical cannabis and virtual reality.
- Gastroenterologists should include these modalities in their therapeutic toolbox so as to maximize therapeutic efficacy and establish improved rapport with patients.


Oh, crap! Was that TODAY?
REGAN

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Thank you for your attention.

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