

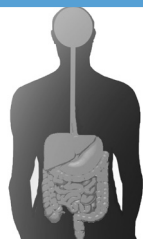


DIGEST



UNC
SCHOOL OF MEDICINE

Our mission is to advance the biopsychosocial understanding and care of patients with functional GI & motility disorders through research, training and education.



DIGESTIVE DISEASE WEEK: ACCEPTED PUBLICATIONS AND ORAL PRESENTATIONS

ASSOCIATIONS BETWEEN FUNCTIONAL GASTROINTESTINAL DISORDERS AND TRAUMATIC EXPERIENCES

FECAL INCONTINENCE SELF-HELP WEBSITE RESEARCH STUDY

EXPERT UPDATE: REVIEW OF CME COURSE FOR MEDICAL PROFESSIONALS ON IBS

SUNG MIN KIM, BS

On November 2, 2013, the UNC Center for Functional GI and Motility Disorders held a continuing educational event titled "How to Treat IBS Effectively: Expert Update for Health Professionals". Irritable bowel syndrome (IBS) affects approximately 10-15% of the adult population and is more commonly diagnosed in women compared to men (Grundmann O and Yoon SL. J Gastroenterol Hepatol. 2010). The symptoms usually occur in episodes lasting 3-4 days and can include abdominal discomfort and pain, cramping, bloating, gas, diarrhea, and constipation. The causes of IBS are not fully understood, but specific foods, stress, and hormones are hypothesized to trigger IBS symptoms. This symposium was designed to provide new insight to medical professionals and researchers about 6 main topics: (1) competing views of the etiology of IBS, (2) how to improve the doctor-patient relationship, (3) standard pharmacological and psycho-pharmacology therapies for IBS, (4) current views of diet and probiotics/antibiotics, (5) cognitive behavioral and

psychological interventions, and (6) clinical applications of the Rome criteria.

Dr. William Whitehead, the Center's director, provided an overview of competing views of the etiology of IBS by describing two models. The biopsychosocial model proposes IBS is one disease moderated by the interaction of multiple biological and psycho-social factors: (1) predisposing genetics or early life environments, (2) psychosocial factors associated with life stress and coping patterns, and (3) gut physiology related to motility, sensation, inflammation, and altered bacterial flora. (Tanaka Y et al., J Neurogastroenterol Motil, 2011). However, no single factor is necessary to diagnose IBS. The heterogeneity hypothesis, a suggestion that IBS is not one disorder with multiple causes but different IBS-like disorders, or phenotypes, with similar symptoms. Each IBS-phenotype has a distinct etiology and requires different treatments. The IBS phenotypes are identified based on: (1) motility (IBS-constipation and IBS-diarrhea), (2) psychological distress, and (3) visceral pain sensitivity. This model provides a rationale for new drug development to be targeted towards select homogeneous groups with similar symptoms rather than all patients with IBS.

Dr. Douglas Drossman presented on the "Essentials of a Productive Physician-Patient Relationship" and emphasized the importance of effective communication for increasing physician and patient satisfaction and improving health outcomes. He described a 9-step method to develop a better physician-patient relationship: (1) listen actively, (2) identify the patient's agenda(s), (3) empathize (i.e., show that you understand the



Discussion panel answering questions from the audience.
Drs. Miranda van Tilburg, Steve Heymen, William Whitehead, Catherine Matthews, and medical student Lalitha Kunduru

REACH OUT TO THE CENTER

PUTTING THE PIECES TOGETHER FOR INFORMATION ON FUNCTIONAL GI DISORDERS

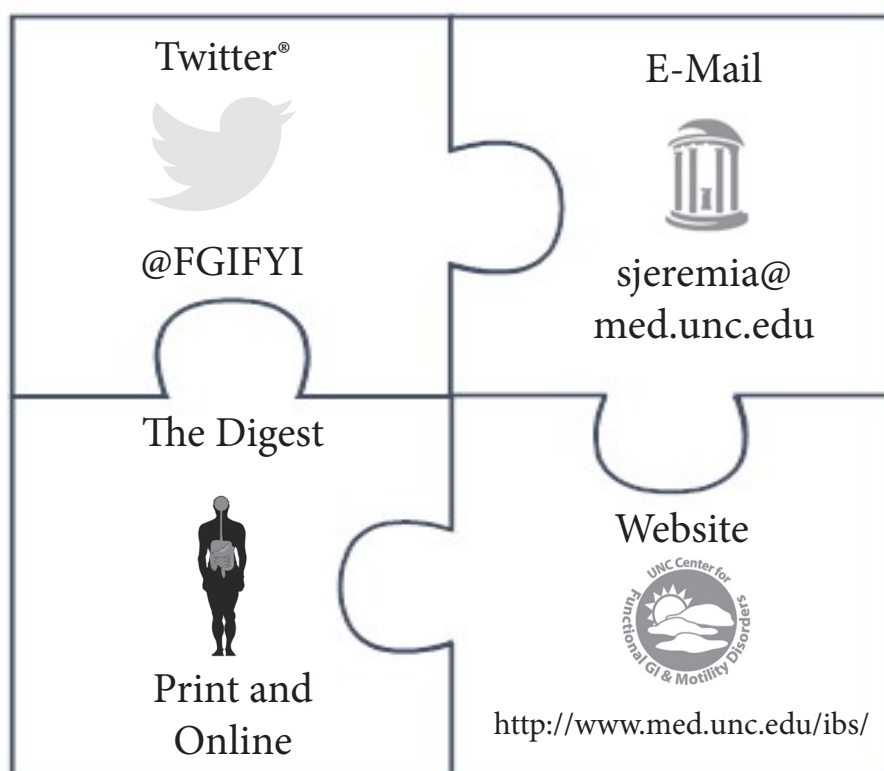
There are many ways to connect with the Center and learn more information about patient care, patient and professional education, and new research opportunities. Our Twitter® feed @FGIFYI is a great source of information on the newest trends, research publications, and information in the field of gastroenterology and within the Center. Follow us and “tweet” the good news!

Our Educational Video library contains digital archives of experts in the field of functional gastroenterology speaking on topics of etiology, symptoms, and treatment options for Irritable Bowel Syndrome (IBS), bacterial overgrowth, diet, psychological interventions, constipation, and functional abdominal pain. We will be posting a new series of videos this year that will catalogue the Continuing Medical Education (CME) course that the Center hosted at the Rizzo Center in Chapel Hill in November, 2013. This CME focused entirely on IBS from a physician standpoint and covered different topics, such as doctor-patient relationship, etiology of IBS, pharmacological therapies, antibiotics and probiotics, psychological interventions, and the Rome criteria in clinical practice.

Are you interested in learning more about different functional GI disorders anytime of the day or night? Visit our video library at <http://fgidpatientupdate.com/>

If you have questions about functional GI disorders, we will be answering three questions each edition of the Digest. Submit your questions via Email or Postal Mail (ATTN: Stefanie Twist; Room 4161G). Your question may appear in the next edition of the Digest!

Also, tune in for our new Online Interactive Expert Video Presentation Series which will be launching in June 2015. (See Page 13)



DIGEST is a quarterly publication of the UNC Center for Functional GI & Motility Disorders, a center of excellence within the Division of Gastroenterology and Hepatology, School of Medicine, University of North Carolina at Chapel Hill.

The Center's director is **William E. Whitehead, PhD**, Professor of Medicine and Gynecology.

Over the past decade, the UNC Center for Functional GI and Motility Disorders has enjoyed significant grant support from a number of private foundations and corporations. These grants have ranged from sponsorships of specific events (symposia or CME courses) to unrestricted grants in support of fellowships and the Center's education and training effort. Support for the Digest Newsletter is provided by Takeda Pharmaceuticals North America, Inc.



DIGEST

Center Director

William E. Whitehead, PhD

Center Associate Director

Yehuda Ringel, MD

Faculty, Clinicians & Investigators

Shrikant I. Bangiwalla, PhD
 Spencer Dorn, MD, MPH
 Steve Heymen, PhD
 Temitope O. Keku, PhD
 Jane Leserman, PhD
 Ryan Madanick, MD
 Olafur S. Palsson, PsyD
 Yolanda Scarlett, MD
 Lisa Gangarosa, MD
 Nicholas J. Shaheen, MD, MPH
 Miranda van Tilburg, PhD
 Danielle Maier MPAS, PA-C

Contracted Development Director

Ceciel Rooker

Center Coordinator

Center Webmaster

Stefanie Twist

Center for Functional GI & Motility Disorders

The University of North Carolina at Chapel Hill

130 Mason Farm Rd.

CB#7080

Chapel Hill, NC 27599

(919) 843-6961

www.med.unc.edu/ibs

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DR. YEHUDA RINGEL RECEIVES PROMOTION TO PROFESSOR OF MEDICINE



In March 2014, Dr. Yehuda Ringel was promoted to the position of tenure Professor of Medicine within the UNC Division of Gastroenterology and Hepatology. Dr. Ringel is the Associate Director for the UNC Center for Functional Gastrointestinal and Motility Disorders and Director of the UNC Functional GI Clinic. Dr. Ringel has been involved with clinical work, translational research and medical education for over 15 years.

Congratulations from the Center on this momentous accomplishment!

TRANSLATIONAL RESEARCH IN FUNCTIONAL GI AND MOTILITY DISORDERS

Translational Research, often also called “bench-to-bedside” refer to research joining knowledge from basic and clinical science to advance the understanding of disease condition and developing of new diagnostic and treatment options. Under the leadership of Dr. Ringel, investigators at the UNC Center for Functional GI and motility Disorders conduct translational research focusing on functional GI disorders. Over the past semester, we had some interesting activities related to this research.

A research work led by Tamar Ringel-Kulka, MD, MPH investigated fecal metabolomic profile in patients with food hypersensitivity and demonstrated significant differences in a variety of metabolites in fecal samples collected from these patients compared to samples collected from healthy controls. Dr. Ringel-Kulka presented this work in an oral presentation at the recent Nutrition & Metabolism Session, American Society for Parenteral and Enteral Nutrition annual (‘Nutrition Week’) meeting in January 2014, located in Savannah, Georgia. At the meeting, they were awarded an Abstract of Distinction award for their work on this project. Other collaborators on this research include Tope Keku, Jia W, Daniel Temas, McCoy A, Qiu Y, Xie G and Yehuda Ringel.

Over the past semester, four post-doctoral fellows who worked with us on different research projects; Keren Hod, MSCE, Chang H. Choi, MD, PhD, Nitsan Maharshak, MD, and Jason R. Goldsmith, MD, PhD.

Keren Hod, MSCE, a nutritionist and a PhD student in epidemiology from Tel Aviv University, Tel Aviv Israel worked with us on two research projects related to clinical characteristics and peripheral blood biomarkers for functional GI symptoms. Ms. Hod will present the results of this work in two abstracts at DDW 2014:

(1) ‘High Sensitive C - Reactive Protein as a Marker for Inflammation in Irritable Bowel Syndrome’. Other collaborators on this research include Tamar Ringel-Kulka, Christopher Martin, Nitsan Maharshak, and Yehuda Ringel.

(2) ‘Abdominal Bloating in Patients with Irritable Bowel Syndrome: Characterization of Clinical Symptoms, Psychological Factors and Associated Comorbidities.’

Other collaborators on this research include Tamar Ringel-Kulka, Miranda Van Tilburg, and Yehuda Ringel.

Chang H Choi MD, PhD is a Gastroenterologist from Seoul South Korea. Dr. Choi is working with our group on several research projects related to the intestinal microbiome and its role in the pathogenesis of functional bowel disorders (FBD) and inflammatory bowel disorders (IBD) in children and adults. Dr. Choi will present preliminary results of this work in an oral presentation at DDW 2014. The presentation is titled;

“Altered Colonic Bacterial Fermentation is a Steadfast Pathophysiological Factor in Irritable Bowel Syndrome”. Other collaborators include Tamar Ringel-Kulka, MD, MPH; Daniel Temas, BsC; Ari Kim, MD; Karen Scott, PhD; Yehuda Ringel, MD.

Nitsan Maharshak, MD is a Gastroenterologist from Tel Aviv Medical Center, Tel Aviv, Israel. Dr. Maharshak worked with us on characterizing and comparing the intestinal microbiota in patients with IBS and healthy controls. He will present preliminary results of

this work at DDW 2014. The abstract is titled: ‘High Throughput Sequencing of the Intestinal Mucosa versus Luminal Microbiota in Humans’. Other collaborators on this research include Ian M Carroll PhD; Tamar Ringel-Kulka MD, MPH; EA Wolber, BsC, Balfour R Sartor, MD, and Yehuda Ringel.

Jason R. Goldsmith MD, PhD is a graduate medical student who worked with our translational research team on a research project aiming to identify mechanisms by which intestinal and probiotic bacteria can affect intestinal sensation and inflammatory responses. The results of this research have been summarized in a manuscript titled: “Lactobacillus Acidophilus NCFM Affects Colonic Mucosal Opioid Receptors Expression in Human Patients with Abdominal Pain.” This is currently under review. Other investigators and authors on this publication include Tamar Ringel-Kulka, MD, MPH. Ian M Carroll, PhD, Silvana P Barros, PhD, Olafur Palsson, PsyD, Christian Jobi, PhD and Yehuda Ringel, MD.

We continue to conduct interesting and exciting research in this area and we will provide an update in the next edition of the Digest.



Top Row: Daniel Temas, Ian Carroll, Christopher Martin, Keren Hod, Yehuda Ringel, Olafur Palsson, Chang Huan Choi
Second Row: Miranda van Tilburg, Tamar Ringel-Kulka, Ari Kim, Danielle Maier, Diane Hunter

UNC FECAL INCONTINENCE SELF-HELP WEBSITE RESEARCH STUDY

The UNC Center for Functional GI and Motility Disorders was awarded a research grant by the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK) to create a self-help website for patients experiencing accidental bowel leakage (ABL). ABL is also known as fecal incontinence. The website is an important part of our program to develop and refine techniques for the conservative treatment of FI and to maximize treatment options for patients. Our goal is for this website to be used in combination with medical therapies for ABL. In spring 2014, the Center will be recruiting individuals with ABL to help us evaluate the understandability, difficulty, and usefulness of the material to patients. Once the Center receives feedback from the initial wave of participants and implements changes based on their recommendations, we will enroll additional waves of people with ABL to review the updated website. Based on participants' recommendations, the content will be further refined until we reach a point at which feedback offers little opportunity for additional improvements.

The aim of the research study is to design a user friendly website where patients and caregivers can find educational content on the management of ABL. The content will include educational videos, symptom diaries, frequently asked questions, and other helpful tools. Topics include guidance on fiber supplements, use of non-prescription (over the counter) medications for diarrhea or constipation, pelvic floor exercises, educational videos and written articles, and "red flag" questions that alert the website users to contact their primary care provider for further assistance. It will be designed for users to enter information daily. The website will combine data from daily symptom diary entries to provide automated feedback for self-management techniques for stool frequency, consistency, and help with controlling incontinence. The diary entries also provide a way of tracking progress by using graphs that enable the user to easily identify patterns over time and to identify triggers such as foods, not allowing enough time to reach the toilet, or other factors that may increase the risk of having an ABL. It will also encourage compliance by emailing or texting reminders to patients that they should visit the website. These reminders can be accessed through a smart phone or a computer. There will be a section devoted to additional resources outside of the website, such as the International Foundation for Functional Gastrointestinal Disorders (IFFGD; <http://www.iffgd.org>) and other websites that have information on local resources or care providers who can continue to offer help for their disorder if an individual feels their current care provider cannot meet their needs.

If you are interested in participating in this research study in the spring of 2014, please contact the Project Manager,

Kirsten Ambrose by phone at 919-962-9787 or by email at kirsten_ambrose@med.unc.edu to be put on a waiting list. You will be contacted and invited to participate once recruitment opens.

Once the website has been tested and shown to be effective for reducing ABL, it will eventually be available for public use. We anticipate it will be helpful to the following groups of patients: (1) Those whose primary care provider encouraged them to visit as an additional treatment resource for ABL, (2) patients who participate privately because they feel embarrassed to disclose their condition to a family member or their primary care provider, and (3) patients who do not have access to a health care provider.

The UNC faculty involved in this research project include Drs. William Whitehead, Olafur Palsson, Steve Heymen, and Jan Busby-Whitehead.



WILLIAM WHITEHEAD, PHD

Professor of Medicine
Adjunct Professor of Obstetrics and Gynecology
Director, Center for Functional GI and Motility Disorders



STEVE HEYMEN, PHD

Associate Professor of Medicine



OLAFUR PALSSON, PSYD

Professor of Medicine



JAN BUSBY-WHITEHEAD, MD

Director, Center for Aging and Health
Division Chief, Geriatric Medicine

ASSOCIATIONS BETWEEN FUNCTIONAL GASTROINTESTINAL DISORDERS AND TRAUMATIC EXPERIENCES

STEFANIE TWIST, BA

Stressful experiences during military service can have a dramatic effect on psychological and physiological well-being in active duty personnel and veterans. This impact has been highlighted in previous publications as increased prevalence of chronic multisymptom illnesses (CMI) and functional gastrointestinal disorders (FGIDs). [1,2,7] According to The Committee on Gulf War and Health, the Department of Veterans Affairs' accepted definition of chronic multisymptom illness is, "The presence of a spectrum of chronic symptoms experienced for 6 months or longer in at least two of six categories – fatigue, mood and cognition, musculoskeletal, gastrointestinal, respiratory, and neurologic – that may overlap with but are not captured by known syndromes (such as Irritable Bowel Syndrome (IBS), chronic fatigue syndrome (CFS), and fibromyalgia) or other diagnosis." [7] Many of the studies cited below have shown clear evidence that psychological treatments are effective at symptom reduction, but more clinical trials need to be conducted to prove efficacy in the CMI population. For those who have served in the Iraq and Afghanistan conflicts, the most common CMI's have been posttraumatic stress disorder (PTSD), traumatic brain injury (TBI), and pain (38 CFR Sec. 3.317) [7]. Effects of stress from disorders such as PTSD, mood disorders, and functional GI disorders have been studied more closely in recent years and from that we have a better understanding now of how the brain and body work together. However, there continues to be a need for further research to better understand and provide treatment for an individual's psychological and physical health after stressful experiences.

While deployed, combat related stress compounds with stressors on the home front, such as concerns with family members, children, money, and spouses changing plans for their future. [9] Stress and anxiety have been shown to exacerbate symptoms of functional gastrointestinal disorders. There has been evidence to suggest that combat induced stress causes increased intestinal permeability which can lead to abdominal pain, abnormal bowel function (diarrhea, constipation or alternating between consistencies), or a combination of these symptoms. [3] New onset GI symptoms can be debilitating to active duty individuals and units as this may require an individual to be removed from their duty station and placed on sick leave. [2,14] This is most prevalent in individuals who succumb to traveler's diarrhea from an infectious pathogen, which includes changes in motility patterns, functional abdominal pain, and increased risk of developing IBS, functional dyspepsia, or CMI's. [2,6,14] If a soldier experienced diarrhea or vomiting during deployment, they were at a significantly higher risk of developing a FGID and that risk only increased with more severe symptoms. [14] Also, increases in severity of GI symptoms were more strongly linked with anxiety, depression, and stress levels. [8]

In a recent study of 2,683 veterans returning from Iraq, it was found that 16.6% met the criteria for a diagnosis of PTSD. [1]

Another study identified 340 Operation Enduring Freedom (OEF) and Operation Iraqi Freedom (OIF) veterans at a polytrauma center and found that 68.2% of the population had a diagnosis of PTSD and 81.5% had a diagnosis of chronic pain. [7] According to a study by Savas et al., female veterans with a diagnosis of IBS and dyspepsia score higher for levels of anxiety, depression, and PTSD. The same study also reported **that every one-point increase in PTSD score increased the odds of reporting IBS and dyspepsia symptoms by 3%.** GI symptoms also differ according to whether a person experiences anxiety or depression. There are strong correlations of anxiety with lowered thresholds for gastric pain and discomfort and gastric accommodation while diagnosis of depression correlated with increases in postprandial distress, nausea, and vomiting. [8] A part of the problem associated with veterans seeking care for functional GI disorders is that most of these disorders do not have visible organic symptoms that can be seen on an endoscopy,

blood tests, or other routine evidence based tests. This leads to frustration, anxiety, and/or depression in those who feel that their symptoms are not considered legitimate by their care provider, family, and friends, which can further exacerbate their symptoms. [7]



Offering timely and effective pharmaceutical, psychological and complementary therapies enhances the chances of breaking the symptom cycle

and leading to an overall better health status and quality of life. There are different types of pharmacological and non-pharmacological therapies available to help with FGIDs and psychological disorders. There is evidence that psychological therapies, such as cognitive behavioral therapy, mindfulness, and hypnosis are successful in reducing symptoms associated with PTSD, IBS, and other disorders. The four most recognized psychological interventions are;

Cognitive Behavioral Therapy (CBT): Structured series of 6 -12 sessions of psychotherapy that focuses on the patient's current symptoms rather than past experiences. The therapy is based on the idea that thoughts about an event cause the patient to experience psychological symptoms such as anxiety and depression, which in turn cause or worsen physical symptoms. The goal is to alter unwanted behaviors or thoughts to reduce the impact they have on psychological symptoms. [8] For example, the therapist would teach the patient to recognize what thoughts or behaviors trigger the psychological or physiological reactions. This may include teaching the patient to recognize the psychological triggers [memories or emotions surrounding the event] that may be linked to the physical symptoms experienced, such as nausea, diarrhea, or abdominal cramping. The therapist

would continue to explain the mechanisms between stress, behaviors, and physical symptoms and how the patient can change their response or behavior to control their symptoms and environment.[11]

Hypnosis: A special mental state where the patient is more receptive to suggestions offered by the clinician. The therapy is meant to change the way the individual perceives psychological and physical symptoms. The clinician will walk the patient through a guided imagery protocol that is aimed at lessening the impact of stress on GI symptoms and pain perception. This is designed to help alter the way the patient pays attention to GI symptoms including not focusing narrowly on pain or discomfort in the abdomen, and giving a sense of control over the symptoms they are experiencing.[8,11] An example of the guided imagery, as given in Drs. Palsson and Whitehead's article Psychological Treatments in Functional Gastrointestinal Disorders, is to "...imagine the intestinal wall being coated with a strong protective coating that makes it immune to irritation or pain, or imagining the bowel as a river and the patient mentally slowing or speeding the flow of the river to counter diarrhea or constipation."

Relaxation Training: The goal of this therapy is to reduce symptoms brought on by an "over-excited" sympathetic nervous system (SNS), which is associated with the "fight or flight" symptoms. This would include training where the participant deliberately relaxes their body to lower their heart rate, slow down breathing, and progressively calm down back to a normal state.[8,11] Studies conducted at UNC-CH have proven this to be effective in patients with IBS. The study showed the use of mindfulness, which is an active and deliberate state of relaxation, reduced visceral sensitivity [pain or discomfort with no physically identifiable source] and improved in quality of life.[4] They hypothesize that, "...as IBS patients learn through mindfulness training to let go of visceral sensations and their worried thoughts about such sensations and observe them with a dispassionate attentional stance, anxiety over sensations of gastrointestinal distention decreases, leading to reductions in abdominal pain and IBS-related impairments in quality of life." [4]

Biofeedback: This type of treatment involves behavioral training where the therapist uses a combination of physical, visual, and auditory feedback to help patients learn to voluntarily control bodily functions. Biofeedback involves attaching devices to monitor pulse, respiration or muscle tension. The patient can observe and alter their physiological response to a situation, such as controlled breathing or progressive muscle relaxation to control their bodily response [rapid heart rate, respiration, or tensing of muscles] or a psychological symptom such as anxiety. The patient can watch their heart rate and blood pressure rise and fall by controlling how they react. This gives the patient a sense of regaining control over their body.[8]

An area of pharmacology that is receiving more attention in recent years is the use of psychopharmacological medications for the treatment of FGIDs. The reasoning behind the increased use of these classes of drugs is most recognizably improvement in symptoms of mood disorders (which can lessen the impact they have on GI symptoms as described above), but there has also been evidence that they can affect GI motility and alter



Example above of a soldier receiving biofeedback [13]

pain perception.[10, 12] Tricyclic antidepressants (TCAs) and norepinephrine (NE) have been shown to slow down gut motility, which helps reduce diarrhea symptoms. The opposite occurs when selective serotonin reuptake inhibitors (SSRIs) are used, as they speed up gut motility and can help with constipation.[10] However, with the introduction of any new medication, side effects are very important to consider. The FDA has included warnings on SSRIs as their use is associated with increased suicidal risk in adolescents and young adults. Not every individual who is diagnosed with a FGID needs psychotropic medication, but for those who do – it is vital to have a good doctor-patient relationship so that the patient feels comfortable with the physician and feels their symptoms are legitimized and not "all in their head." [12] Individuals who felt hopelessness, afraid or helpless about their medical conditions were less likely to feel that they had positive and satisfying interactions with their physician. This is why it is important to include psychological therapies with other pharmacological interventions. A review of negative patient perceptions of those diagnosed with a CMI included feeling that their health care provider did not believe their symptom(s), wanted to push treatment over seeking out underlying causes of the symptoms, was not treating their condition effectively, or felt that their care provider did not fully understand their problems.[7]

There have recently been positive changes in the availability of help for FGIDs and CMIs. Organizations inside and outside the government are helping active duty personnel and veterans become educated about different resources available for stress and functional GI disorders. One organization that is highlighting the prevalence of and advocating for patient education, continued research efforts, and a global acceptance of FGIDs is the International Foundation for Functional Gastrointestinal Disorders (IFFGD; www.iffgd.org). They have lobbied congress for many years on behalf of the functional GI community and push for continued support for research on FGIDs. One of the most recent efforts for FGID advocacy was the FY2013 Senate Defense Appropriations Bill for continued support of the Gulf War Illness Research Program through the Department of Defense.[10] Through the Gulf War Illness Program, investigators are able to carry out research on multiple illnesses and disorders, including gastrointestinal disorders, that impact military personnel and veterans with the aims of finding new treatments and better understanding the disorder(s).

Multiple treatment paths can be used to treat functional GI disorders. Some individuals may benefit from non-

pharmacological interventions for their FGID, such as CBT, hypnosis, or mindfulness training while others may need combinations of medicine and complementary psychological or alternative medication intervention. Great advances in the science, understanding, and treatment have been made to help individuals with FGIDs and CMIs, but there is a tremendous amount we still need to learn. UNC Center for Functional GI and Motility Disorders has offered patient education symposiums and physician CME courses to advance the knowledge base of current science and etiology, pharmacological treatments, complementary therapies, and we advocate for greater acceptance and research efforts into FGIDs. Most individuals who have served in the military or are relatives or friends of military personnel have heard the saying, "A veteran is someone who, at one point in his/her life, wrote a blank check made payable to the "United States of America" for an amount of "up to and including my life." Service members have been exposed to traumatic events during deployments, whether that was witnessing death, injury, sexual violence, or other traumatic events. It is our responsibility as caregivers and researchers to treat everyone with FGIDs with dignity, diligence, and dedication, but none so much deserves the attentiveness as our military service members.

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UNC FUNCTIONAL GI AND MOTILITY DISORDERS CLINICAL TEAM

The Functional GI and Motility Clinic at UNC provides a comprehensive clinical service for patients with difficult-to-diagnose and challenging-to-treat functional GI and motility disorders. Under the new directorship of Yehuda Ringel, MD the Clinic's services and educational activities have expanded over the past two years. Our unique multidisciplinary, patient-centered approach integrates medical, nutritional, physiological and psychological factors in the evaluation and treatment of patients with these disorders.

Clinical providers also include Yolanda Scarlett, MD, Spencer Dorn, MD, MPH, Danielle Maier MPAS PA-C, Cara O'Connell-Edwards, PhD and Robin Dever, RN. Our clinical team is also routinely involved with consultation on patients hospitalized at UNC Hospitals and with physicians who call for advice regarding their patients. The clinic also serves as a teaching site for medical students, residents, GI fellows in training and visiting health care providers who are interested in learning more about our unique clinical approach and management of patients with functional and motility GI disorders.



The Center's Clinical Team; Drs. Ringel, Dorn, Scarlett, and Danielle Maier, MPAS, PA-C. Robin Dever, RN, and Jennifer Layton

For information on how to schedule an appointment, please visit our website, <http://www.med.unc.edu/ibs/>



EXPERT UPDATE ON TREATMENTS FOR FUNCTIONAL GI DISORDERS: A SYMPOSIUM FOR PATIENTS

JUNE 22 - 23, 2014

HOSTED BY
**UNIVERSITY OF NORTH CAROLINA - CHAPEL HILL
CENTER FOR FUNCTIONAL GI AND MOTILITY DISORDERS**

**WASHINGTON MARRIOTT AT METRO CENTER
775 12TH ST NW, WASHINGTON, DC 20005**

EDUCATIONAL LECTURES AVAILABLE ONLINE VIA LIVE WEBCAST OR IN PERSON!

EDUCATIONAL LECTURES

JUNE 22, 2014;
8:30A-5:45P

INTERACTIVE LECTURES
FUNCTIONAL GI DISORDERS

EVENING WITH THE EXPERTS RECEPTION

JUNE 22, 2014
6:00P-8:00P

ONE-ON-ONE
CONVERSATIONS WITH
YOUR FAVORITE EXPERTS

WORK SHOP SESSIONS

JUNE 23, 2014
8:30A-1:15P

HANDS ON "HOW TO"
WORKSHOPS WITH
INTERACTIVE LEARNING

REGISTRATION INFO AVAILABLE AT WWW.FGIDPATIENTUPDATE.COM
OR FOLLOW US ON TWITTER @FGIFYI

SPEAKERS

Lin Chang, MD	Jay Pasricha, MD
Douglas Drossman, MD	Yehuda Ringel, MD
Laurie Keefer, PhD	Richard Saad, MD
Ryan Madanick, MD	Kate Scarlata, RD
Louise Mott, R.N.	Jan Tack, MD
Olafur Palsson, PsyD	William Whitehead, PhD

Registration Opens Mid-April, 2014

2-Day Event Package: Admission: \$20.00*
(Free Online Attendance June 22)

Sunday, June 22, 2014

In-Person And Online Participation Includes;

- Educational Lectures with over 12 different talks and 4 Interactive Q&A Sessions
- Evening With The Experts Reception (In-Person Only)
- Includes Meals and Evening Refreshments (In-Person Only)

Monday, June 23, 2014

(Online Not Available Due to HIPAA Privacy Laws)

- Includes 2 - 2 hour hands-on interactive classes on how to self-manage functional GI symptoms with 6 different classes to choose from
- Includes Breakfast and refreshments

*Participants will be responsible for the cost of overnight accommodations and transportation to the event.

CONTINUING MEDICAL EDUCATION

(FROM COVER)

patient is suffering), (4) validate feelings, (5) set realistic goals, (6) educate, (7) reassure, (8) negotiate, and (9) “be there”. These nine steps are the foundation to develop effective medical and patient education programs and should be adopted by all physicians. Dr. Drossman shared example situations from his private practice and a series of video clips to exemplify how to approach a patient with the 9-step method. Productive patient-physician relationships and educational programs can strongly influence the patient’s emotional and functional status, symptom resolution, and pain control.

Drs. William Chey and Lin Chang provided current evidence and treatment strategies for IBS. Management options for mild IBS symptoms should begin with diet, increase exercise, and other lifestyle recommendations. It is essential for newly diagnosed patients to be educated about IBS with positive reassurance from their physicians. Patients with moderate symptoms are recommended to have routine follow-up appointments. They should be taught techniques to manage stress, and should begin drug therapy based on their symptoms. There is mounting evidence for IBS-diarrhea to be treated with a low dosage of tricyclic antidepressants to improve pain and diarrhea symptoms. The FDA has not approved this class of drugs for the treatment of IBS and their use remains “off label”. New studies are integrating antibiotics and probiotics as a new treatment option to improve IBS-diarrhea symptoms. For patients diagnosed with IBS-constipation, studies recommend fiber and laxatives to improve GI motility and the prescription medications, Lubiprostone and Linaclotide, to benefit symptoms of bloating and abdominal pain. Finally, for patients with severe symptoms, recommended multidisciplinary approach include: psychological and pharmacological treatments and continuing care with specialist physicians.

Dr. Magnus Simren explained the importance of probiotics, prebiotics, and antibiotics for the treatment of IBS. Probiotics are living microorganisms taken in capsule form to help protect against infection, maintain a healthy balance of bacteria in the gut, assist in small bowel and colonic transit, and reduce abdominal distention and discomfort. Prebiotics, such as dietary fiber, are the food source of the probiotics, and consumption of prebiotics may stabilize the level of beneficial bacteria. Though many studies provide evidence for the benefits of probiotics, current manufacture and sales of these products are poorly regulated. In some cases, probiotic products do not contain live organisms or may become contaminated during the manufacturing process. Studies have shown antibiotics increase functional GI symptoms, such as constipation, diarrhea, and bloating, because they target both beneficial and harmful bacteria in the gut (Maxwell et al Am J Gastro 2002). Thus, antibiotics may alter the number and type of gut bacteria needed for a healthy balance. Further trials and head-to-head comparisons are needed to understand the importance of gut bacteria in IBS.

Dr. Sheila Crowe described the role of diet in IBS management. IBS patients report a higher diet of legumes, processed

meat, fruit compotes, fried or fatty foods, and histamine releasing foods (milk, wine/beer, and pork) (Chirila L. et al, J Gastrointest Liver Dis, 21: 357, 2012 and Bohn, L. et al. Am J Gastroenterol, 108: 634, 2013). Currently, there is limited and controversial evidence on the views of food allergies and dietary treatments for IBS. However, basic IBS treatments involve lifestyle changes, such as diet and exercise. There are natural physiological food reactions that may be mistaken for IBS symptoms. Large volume meals or food groups, such as legumes, cruciferous vegetables, garlic, onions, etc., may cause abdominal distension and lead to flatus. Fatty foods and meats may delay gastric emptying due to inhibited intestinal absorption caused by short chain fatty acids. Additionally, poorly absorbable sugars and carbohydrates may lead to IBS-like symptoms such as diarrhea, bloating, and flatulence. Large head-to-head comparisons are needed to explore possible mechanisms that may influence how probiotics and diet alter or improves IBS symptoms.

If you were unable to attend this event, the lectures have been digitally archived and will be posted online for self-reported CME credit. The educational sponsors included: The University of North Carolina at Chapel Hill School of Medicine, the Rome Foundation, Entera Health, and Takeda.

We would like to acknowledge and thank our grant sponsors: Lexicon Pharmaceuticals, Entera Health, and Ironwood. The Faculty and Planning Committee Members who developed the agenda and presentations were: Spencer Dorn M.D., Lin Chang M.D., Magnus Simren M.D., Sheila Crowe M.D., William Whitehead Ph.D., William Chey M.D., and Olafur Palsson Psy.D.. The educational speakers included: Lin Chang M.D., William Chey M.D., Sheila Crowe M.D., Douglas Drossman M.D., Laurie Keefer Ph.D., Jeffrey Lackner Psy.D., Olafur Palsson Psy.D., Magnus Simren M.D., and William Whitehead Ph.D.

Part II of this article will cover the Rome Criteria in Clinical Practice and Psychological Interventions. This article will be continued in the next edition of the Digest.

RESEARCH SUBJECTS NEEDED

CAUSES OF SYMPTOMS STUDIES

Parents of Children who suffer from frequent stomachaches needed for a Research Study

Would you like to learn new ways to manage your child's stomachaches? Researchers at UNC are conducting a research study evaluating different methods for parents to manage their child's stomachaches.

You may be eligible if:

- Your child is between the ages of 7 - 12.
- Your child has frequent stomachaches.

Participation

- 3 - 30 minute training sessions
- Parents and children complete 5 surveys over the course of 1 year
- Parents receive \$150 and children receive \$25.

Principal Investigator
Dr. Miranda van Tilburg

Contact Information

Dr. Miranda van Tilburg
919-843-0688
tilburg@med.unc.edu

Diagnostic Evaluation of Functional GI and IBS Networks (DEFINE)

The UNC Center for Functional GI and Motility Disorders is looking for eligible subjects to participate in the DEFINE study.

You may be eligible to participate if:

- You have experienced any of the following GI symptoms for at least 3-6 months without a definitive diagnosis:
 - Abdominal pain or discomfort
 - Bloating
 - Constipation
 - Diarrhea
- You have not had any definitive testing for your GI symptoms
- You are at least 18 years of age

Eligible participants may receive up to \$214 for time and travel.

The development and validation of a blood test to identify IBS: DEFINE (Diagnostic Evaluation of Functional GI and IBS Networks)
IRB #13-2900

Principal Investigator
Dr. Yehuda Ringel, MD

Contact Information

Daniel Temas
919-843-1003
Daniel_Temas@med.unc.edu

TREATMENT STUDIES

RESEARCH SUBJECTS NEEDED

Recruiting adult women with diarrhea predominant irritable bowel syndrome for a research study

We are looking for adult women with a specific type of irritable bowel syndrome (IBS) to join a research study assessing a potential new medication for IBS.

The RESTORE 5 Study will last for up to 8 weeks and involve about 5 clinic visits.

You may be able to take part in the RESTORE 5 Study if you:

- Are a woman 18 - 65 years of age
- Have had symptoms of IBS (including abdominal pain/discomfort and diarrhea) for at least 6 months
- Have loose or watery stools > 25% of the time and hard or lumpy stools < 25% of the time.

To participate in this trial, you must NOT have been diagnosed with;

- Crohn's Disease
- Ulcerative Colitis
- Diabetes mellitus
- Lactose Malabsorption
- Malabsorption syndromes
- Celiac Sprue

- Be pregnant or planning to become pregnant.

Qualified participants will receive study-related care including comprehensive physical exam and investigational study drug at no cost. Monetary compensation for study visits will be provided.

Principal Investigator
Lisa Gangarosa, MD

Research Coordinator
Angela Kibiy, RN, MPH
919-537-3841
angela_kibiy@med.unc.edu

DOUG DROSSMAN EXPANDING HIS ROLE IN UNC PROFESSIONAL EDUCATION



Douglas Drossman, MD retired from the University Of North Carolina in 2011 and is now an Emeritus Professor of Medicine. His discussions with Dr. Nick Shaheen, the new interim Chief of the Division of Gastroenterology and Hepatology, have led to a decision to expand his involvement in the GI fellowship program. GI fellows will be able to rotate through his private practice.

Doug will also expand his teaching role through seminars for fellows on topics that include case studies in functional GI,

pharmacological and psychological interventions, improved doctor-patient communication, and use of the Rome diagnostic criteria in clinical practice. Visiting scientists and health care professionals can also arrange to rotate through his clinic (by appointment only).

Patients may be referred to the Drossman Gastroenterology Clinic through the website, www.drossmangastroenterology.com/ or by calling (919) 929-7990. Dr. Drossman does not accept insurance plans or Medicare, but patients can file for reimbursement through their personal insurance carrier. Non-UNC physicians may also refer patients to him for evaluation and management.

BE AN ADVOCATE FOR DIGESTIVE HEALTH

You are invited to participate in the 7th annual DHA Advocacy Day in Washington, DC on June 23-24, 2014!

DHA, the Digestive Health Alliance, is the grassroots arm of the International Foundation for Functional Gastrointestinal Disorders (IFFGD).

You can help fill the information gap surrounding functional GI and motility disorders in Washington, D.C. by becoming an advocate for digestive health. Your outreach to Members of Congress will help educate policy makers about the needs of patients and inform them of how they can take meaningful action.

Through participating, you will take part in the legislative process by sharing your story with Members of Congress. Without your voice, your legislators will not hear and understand the importance of these critical issues.

We hope to see you in Washington, D.C. for DHA Advocacy Day 2014.

Together we can make a difference!

Event Details

DHA Advocacy Day 2014 will start Monday afternoon at the Phoenix Park Hotel with registration, legislative updates, and dinner. We will meet at the Phoenix Park Hotel again Tuesday morning for breakfast and advocacy training, before walking a few blocks to Capitol Hill. The event should wrap up on Capitol Hill by 4:30pm.

Phoenix Park Hotel
520 North Capitol Street, N.W.
Washington, D.C. 20001

If you plan to attend, register by Friday, May 30th. You can register online at www.dha.org/advocacy2014/ or by phone at (414) 964-1799.

There is no fee to participate in Advocacy Day; however participants are responsible for their own transportation and lodging expenses. Dinner will be provided on Monday, June 23rd; breakfast and lunch will be provided on Tuesday, June 24th.

For more opportunities to get involved, visit www.dha.org.

NEW ONLINE INTERACTIVE EXPERT VIDEO PRESENTATION SERIES FOR FUNCTIONAL GI PATIENTS: LAUNCHING IN JUNE

OLAFUR S. PALSSON, PSY.D.



Our Center has over many years made efforts to provide high-quality education on functional GI disorders through the internet, in a way that is designed to have educational value for individuals suffering from these disorders. We ran a successful series of 2-hour web-based public chatroom sessions for patients from 2002 to 2005, and then again with updated technology from 2009 to 2012. In these 2-hour evening sessions, called “Evening with the Experts”, patients all over the U.S. (and occasionally patients joining in from other countries as well) had an opportunity to log into a special online chatroom to learn first-hand in an interactive manner about selected functional GI topics from experts in the field. The sessions started with an approximately half-hour audio- or video-narrated slide presentation by the selected expert of the month, followed by 90 minutes of question-and-answer discussion between the expert and the patient participants conducted through a text-based chat interface. The discussions were often very lively and intelligent and addressed patient issues directly. We were often able to provide nationally and internationally recognized leading experts on the selected topics as our presenters, and they were tasked with giving an overview of the latest and best knowledge in the field on their assigned topic, and discussing it in a way that was practical and understandable for the participating patients.

This Evening with the Experts series was extremely well received by patients, many of whom expressed appreciation for this unique opportunity to personally interact with leading experts in the field and have their questions answered in real-time. The main limitations of this approach were variable audience sizes that depended on popularity of different topics, and even more the one-time 2-hour opportunity patients had to participate on each topic. Patients sometimes contacted us after sessions on a given topic and expressed regret over having missed the session due to schedule conflicts or not knowing about it in time. It became clear that a way to broaden the window of participation was desirable in order to maximize the educational value.

We are now preparing to build on our past success and launch a revised version of this educational activity, which we expect

will overcome the limitations of the previous approach, and enable us to broaden the opportunity for patient input and participation.

Our new series, which will launch in June this year (2014), will be an interactive online patient learning resource on key functional GI topics by leading experts. However, instead of limiting patient input and questions to a single 2-hour period, we will now announce the upcoming topics three months in advance and invite patients to submit questions before the video presentations are made and also for one week after the presentations are posted on our website. The expert presenters will address the submitted questions in their recorded presentations, as well as in writing on a bulletin board associated with the posted presentations.

The program will consist of a series of monthly 30 minute long online slide presentations with audio or video narration. The video presentations and the associated question-and-answer interaction between patients and the presenting experts will be posted on a dedicated public web page (to be announced soon) and will remain on that page for 2 years, so that an archive of educational presentations will build over time. Additionally, each posted video presentation will have an associated brief self-test for the viewing audience to test their own learning of the points in the presentation, with correct answers provided when errors are made.

We will also have an ongoing survey on the program site for participating patients to indicate which topics they would most like to see us address in this series in the future, and will endeavor to include the most requested topics. We aim to produce 12 educational videos in the first year of this program, and then continue this series in coming years, pending financial support for this activity.

We encourage you to stay tuned and visit our Center website, [www.med.unc.edu/ibs](http://med.unc.edu/ibs) in June for further announcements and details about this unique new educational program.

DIGESTIVE DISEASE WEEK: ACCEPTED PUBLICATIONS AND PRESENTATIONS

DDW 2014

Center faculty and investigators will be well represented in presentations and posters at Digestive Diseases Week 2014 May 3 - 6 in Chicago, Illinois

DDW is the premier research and clinical forum for scientists and clinicians within digestive diseases which includes gastroenterology, liver disease and gastrointestinal surgery. The American Gastroenterology Association (AGA) represents gastroenterologists. The UNC Center plays an important role that is spanning this decade in developing programs that focus on research and education for those with functional gastrointestinal disorders.

ORAL SESSIONS

SATURDAY, MAY 3, 2014

Session Title: Pediatric IBD
Article Title: Coping Predicts Disability, Quality Of Life And Depression In Both IBD and FAP Patients
Authors: Miranda A. Van Tilburg, Robyn Claar, Joan Romano, Shelby L. Langer, William E. Whitehead, Bisher Abdullah, Dennis Christie, Rona Levy
Location: 8:00AM; South Hall (McCormick Place)

SATURDAY, MAY 3, 2014

Session Title: Microflora and the ENS: Evolving Concepts
Article Title: Altered Colonic Bacterial Fermentation is a Steadfast Pathophysiological Factor in Irritable Bowel Syndrome
Authors: Chang Hwan Choi, Tamar Ringel-Kulka, Daniel J. Temas, Ari Kim, Karen Scott, Yehuda Ringel
Location: 8:52AM: S104A (McCormick Place)

SUNDAY, MAY 4, 2014

Session Title: Meet-the-Investigator Luncheons
Article Title: Enteric Microflora and Functional Bowel Disorders - Meet the Investigators Luncheons
Authors: Yehuda Ringel
Location: 12:30PM: N126 (McCormick Place)

MONDAY, MAY 5, 2014

Session Title: Fecal Incontinence: Unmet Needs and Future Directions
Article Title: Unmet Needs and Future Directions
Authors: William E. Whitehead
Location: 3:06 PM: S101A (McCormick Place)

MONDAY, MAY 5, 2014

Session Title: The Genetic Basis For Irritable Bowel Syndrome
Article Title: FKBP5 gene is associated with IBS diagnosis.
Authors: Shad B. Smith, William Maixner, Olafur S. Palsson, Miranda A. Van Tilburg, Motoyori Kanazawa, William E. Whitehead
Location: 8:39 AM: S502 (McCormick Place)

MONDAY, MAY 5, 2014

Session Title: Functional Bowel Disease: Clinical Trials
Article Title: Mindfulness Meditation Has Long-term Therapeutic Benefits in Women with Irritable Bowel Syndrome (IBS): Follow-up Results from a Randomized Controlled Trial
Authors: Keturah (Kim) R. Faurot, Susan Gaylord, Olafur S. Palsson, Eric L. Garland, John D. Mann, William E. Whitehead
Location: 3:00 PM: S102ABC (McCormick Place)

MONDAY, MAY 5, 2014

Session Title: Pediatric Functional and Motility Disorders
Article Title: Functional Dyspepsia in children: Can we distinguish epigastric pain and postprandial distress?
Authors: Miranda A. Van Tilburg, Jeffrey S. Hyams, Alycia Leiby, Lynn S. Walker, Olafur S. Palsson, Jan F. Tack, Brennan M. Spiegel, Robin C. Spiller, Yunsheng Yang, William E. Whitehead
Location: 4:00 PM: S104A (McCormick Place)

MONDAY, MAY 5, 2014

Session Title: Pediatric Functional and Motility Disorders
Article Title: Prevalence of child/adolescent functional gastrointestinal disorders in a national U.S. community sample
Authors: Miranda A. Van Tilburg, Lynn S. Walker, Olafur S. Palsson, Sung M. Kim, Brennan M. Spiegel, Robin C. Spiller, Jan F. Tack, Yunsheng Yang
Location: 4:30 PM: S104A (McCormick Place)

TUESDAY MAY 6, 2014

Session Title: New Approaches to Anorectal Disorders
Article Title: Fiber or Imodium Prescription (Rx) Management for Bowel Incontinence: The FIRM Randomized Clinical Trial
Authors: Alayne D. Markland, Kathryn L. Burgio, William E. Whitehead, Holly E. Richter, Unita S. Granstaff, C. Mel Wilcox, David T. Redden, Timothy M. Beasley, Patricia S. Goode
Location: 8:30 AM: S501 (McCormick Place)

ORAL SESSIONS

TUESDAY, MAY 6, 2014

Session Title: New Approaches to Anorectal Disorders

Article Title: Fecal Incontinence (FI) Prevalence and Associated Gastrointestinal Risk Factors in the U.S. General Population

Authors: Olafur S. Palsson, Miranda A. Van Tilburg, Brennan M. Spiegel, Jan F. Tack, Robin C. Spiller, Lynn S. Walker, Yunsheng Yang, William E. Whitehead

Location: 8:45 AM: S501 (McCormick Place)

TUESDAY, MAY 6, 2014

Session Title: Functional Bowel Disease: Risk Factors and Epidemiology

Article Title: Irritable Bowel Syndrome (IBS) Prevalence in the U.S. General Population: Results from the Rome Normative Gastrointestinal Symptoms Survey (RNGSS)

Authors: Olafur S. Palsson, Miranda A. Van Tilburg, Brennan M. Spiegel, Jan F. Tack, Robin C. Spiller, Lynn S. Walker, Yunsheng Yang, William E. Whitehead

Location: 3:05 PM: S105A (McCormick Place)

POSTER SESSIONS

SATURDAY, MAY 3, 2014

Session Title: Functional Dyspepsia, Nausea and Vomiting

Article Title: Uninvestigated Dyspepsia in the U.S. General Population: Results from the Rome Normative Gastrointestinal Symptoms Survey (RNGSS)

Authors: Olafur S. Palsson, Miranda A. Van Tilburg, Brennan M. Spiegel, Jan F. Tack, Robin C. Spiller, Lynn S. Walker, Yunsheng Yang, William E. Whitehead

Location: 8:00 AM: South Hall (McCormick Place)

SUNDAY, MAY 4, 2014

Session Title: Irritable Bowel Syndrome

Article Title: Abdominal Bloating in Patients with Irritable Bowel Syndrome: Characterization of Clinical Symptoms, Psychological Factors and Associated Comorbidities

Authors: Keren Hod, Tamar Ringel-Kulka, Miranda A. Van Tilburg, Yehuda Ringel

Location: 8:00 AM: South Hall (McCormick Place)

SUNDAY, MAY 4, 2014

Session Title: Pediatric Functional and Motility Disorders

Article Title: Prevalence of infant/toddler functional gastrointestinal disorders in the U.S.: Results of a national community survey of mothers

Authors: Miranda A. Van Tilburg, Paul E. Hyman, Lynn S. Walker, Audra Rouster, Olafur S. Palsson, Sung M. Kim, Jan F. Tack, Robin C. Spiller, Brennan M. Spiegel, Yunsheng Yang, William E. Whitehead

Location: 8:00 AM: South Hall (McCormick Place)

SUNDAY, MAY 4, 2014

Session Title: Irritable Bowel Syndrome

Article Title: High Sensitive C - Reactive Protein as a Marker for Inflammation in Irritable Bowel Syndrome

Authors: Keren Hod, Tamar Ringel-Kulka, Christopher F. Martin, Nitsan Maharshak, Yehuda Ringel

Location: 8:00 AM: South Hall (McCormick Place)

MONDAY, MAY 5, 2014

Session Title: Anorectal Dysmotility

Article Title: Patient Preference for Defining Success in Fecal Incontinence Treatment Trials

Authors: Steve Heymen, Olafur S. Palsson, Sung M. Kim, Stefanie Twist, William E. Whitehead

Location: 8:00 AM: South Hall (McCormick Place)

MONDAY, MAY 5, 2014

Session Title: Anorectal Dysmotility

Article Title: Patient Preference for What Should Be Included in the Definition of Fecal Incontinence.

Authors: Steve Heymen, Olafur S. Palsson, Sung M. Kim, Stefanie Twist, William E. Whitehead

Location: 8:00 AM: South Hall (McCormick Place)

MONDAY, MAY 5, 2014

Session Title: Anorectal Dysmotility

Article Title: Researchers identify priorities for fecal incontinence: Survey of scientists

Authors: William E. Whitehead, Adil E. Bharucha, Satish S. Rao, Frank A. Hamilton, Sung M. Kim

Location: Mon, May 05

8:00 AM: South Hall (McCormick Place)

TUESDAY MAY 6, 2014

Session Title: Irritable Bowel Syndrome

Article Title: High Throughput Sequencing of the Intestinal Mucosa versus Luminal Microbiota in Humans

Authors: Nitsan Maharshak, Ian M. Carroll, Tamar Ringel-Kulka, Elizabeth A. Wolber, Ryan B. Sartor, Yehuda Ringel

Location: 8:00 AM: South Hall (McCormick Place)

USING RELAXATION IN COPING WITH GASTROINTESTINAL DISORDERS

KENNETH R. JONES, PH.D. AND STEVE HEYMEN, PH.D.

Relaxation training is an integral component of behavioral therapies for managing chronic pain, promoting health, and helping patients cope with life-threatening illness. Relaxation can also assist in managing functional GI disorders.

How can Relaxation Help?

Research has shown that relaxation provides several health benefits including: decreasing excess arousal produced by worry or anxiety, managing insomnia, buffering the adverse physiological responses to stress, and increasing pain tolerance while decreasing some of the symptoms associated with chronic pain. Relaxation training is also a vital part of any stress management program and is a component of many cognitive-behavioral treatment programs for problems such as headache, depression, anxiety, and phobias. Many researchers and health professionals believe that relaxation provides two important functions: (1) as a coping skill that can be used immediately when a person is stressed, overly aroused, or in pain, and (2) by preventing some of the damaging effects of stress. Daily practice of relaxation lowers arousal that is associated with wear and tear on the body. Regular use of relaxation enables one to calm the body before beginning stressful activities and has been associated with improvements in the immune system. For individuals with functional GI disorders, relaxation appears to help by dampening the pain, managing the arousal naturally associated with physical distress, empowering the patient with self-help skills, and managing irritability which is a very common consequence of chronic pain.

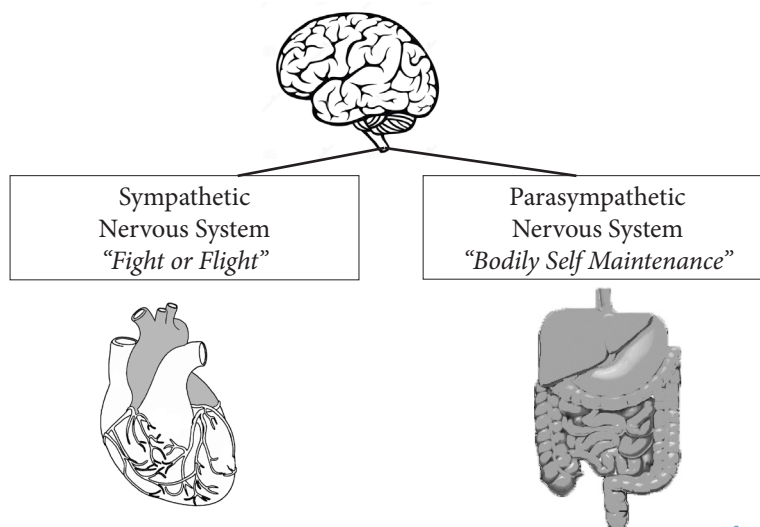
What is Relaxation?

The skill of achieving a deep state of relaxation has been pursued throughout much of recorded history and is a key element in many religious, cultural, and philosophical traditions. Contemporary health scientists have attempted to specify what relaxation is and identify how to teach people to relax effectively. It is helpful to view relaxation from the perspective of three integrated systems in the body: (1) the brain, (2) the skeletal muscle system, and (3) the autonomic nervous system.

The Brain/Cognition – During and following relaxation, individuals typically report experiencing less rapid thinking and an increased ability to focus thoughts and maintain concentration. The quality of thought is also reported to be calm and restful in nature. Herbert Benson, M.D. describes the thinking state of relaxation as a “passive attitude,” perceived as a peaceful willingness to just let thoughts flow in a natural, non-directed, or non-controlled manner. Relaxation produces a particular pattern of bioelectrical brain activity as recorded in the electroencephalogram (EEG). We refer to this EEG pattern as alpha activity. Everyone produces some alpha activity prior to falling asleep. Difficulty producing alpha activity is associated with sleep onset insomnia. Because we can record alpha and give people feedback on how well they are producing alpha states, we can use alpha feedback as one way to teach relaxation skills (see Biofeedback, below).

The Muscles – When relaxed, there are two changes in muscular activity. First, relaxed people are very still. When they move, they do so slowly and gently. Second, muscle tone is greatly diminished when people relax. Muscle tone is the background level of muscle tightness in between overt muscle movements. Many of us get sore, aching muscles in our lower backs and shoulders or develop muscle tension headaches when muscle tone is too high for too long.

The Autonomic Nervous System – The third system that changes with relaxation is the autonomic nervous system. This is the part of the nervous system outside of our brain and spinal cord that controls digestion, blood circulation, and other basic biological processes. This nervous system controls parts of our body that we do not normally have to consciously attend to, like our heartbeat or the level of activity of our gastrointestinal system. The system has two branches, the sympathetic nervous system and the parasympathetic nervous system. The sympathetic and parasympathetic systems activate different parts of the body in different ways, but they tend to act like the two sides of a scale – when the sympathetic system is activated, the parasympathetic system is less activated and vice-versa. Generally, the sympathetic nervous system is activated when you are challenged, stressed, or faced with a dangerous situation. Our heart beats more forcefully and races, our palms sweat, and we suddenly feel very awake and alert. By contrast, we tend to be more parasympathetically activated when out of danger and environmental demands are low. Under parasympathetic activation, the organs take care of “vegetative” or housekeeping functions such as digesting meals, converting blood sugars for long-term storage, and moving nutrients to cells while moving waste away. Breathing is an interesting physiological process. It is controlled by the autonomic nervous system (such as when we sleep), but can also be controlled voluntarily (such as when we hold our breath). Research studies suggest that many parts of the autonomic nervous system tend to follow the activity of breathing. Under sympathetic activation, breathing tends



to be rapid, shallow, and less rhythmic. During relaxation and parasympathetic activation, breathing is slow, deep, and has a regular rhythm. Because one can voluntarily change breathing patterns and because the autonomic nervous system tends to mimic what is going on with breathing, a relaxed breathing pattern can be a successful way to gain control over automatic physiological processes.

These three systems – the brain/cognition, the muscles, and the autonomic nervous system – are integrated by brain centers including: the limbic system (governing emotions), the hypothalamus (controlling basic biological/behavioral processes), and the reticular activating system (regulating arousal). The three systems tend to work in a coordinated fashion. When an individual changes the pattern of responding in one system, this affects the other systems. Thus, if one becomes very still and reduces muscle tone, there is a tendency for the brain and autonomic nervous system to generally reflect relaxation. Methods of producing relaxation tend to focus on one system, combinations of these systems, or all three.

Key Elements in Learning to Relax

Like any skilled act, relaxation skills are developed through practice. For a patient to show any lasting benefit from relaxation training, research has indicated that a minimum of four training/therapy sessions is critical. Researchers have found that patients will continue to show skill development over the first 10 relaxation training sessions, but generally, patients do not show additional benefit from more than 10 sessions. Regular practice of relaxation appears to be critical in learning how to become deeply relaxed and producing health benefits from relaxation. If one has difficulty in becoming relaxed, special coaching or individual tailoring of a relaxation technique may be required (see Seeking Professional Assistance, below).

Which Method is Best for Me?

There are subtle differences produced by various methods of teaching relaxation. Nevertheless, researchers have repeatedly found that any systematic program of relaxation appears to produce positive changes in physiologic and psychological states for most people. Thus, one should choose a relaxation-training program that feels comfortable to them. Various training programs are available through education programs such as yoga, transcendental meditation, or self-hypnosis. Many self-help books, guided relaxation tapes, or music-based relaxation recordings are also available. Biofeedback can also be a very powerful relaxation technique. Biofeedback is a psychological self-regulation technique using feedback from one's body reflected through a computer. Several studies have also shown that hypnosis is helpful to irritable bowel syndrome patients. Hypnosis therapies for functional GI disorders include both relaxation and suggestions for how to cope with functional GI problems.

The Basics

Roger Poppen has done a good deal of research attempting to identify in the most basic way, what one has to do to produce relaxation. He has broken this down into ten basic behaviors that you may want to try (see below).

Ten Relaxed Behaviors:

Most individuals prefer practicing relaxation in a comfortable chair in a quiet room (TV off).

Head: The head is motionless and well supported by a pillow or chair, and is centered with the midline of the body.

Eyes: Eyelids are lightly closed with smooth appearance and there is no motion of the eyes (one may want to focus on an object low and distant in the room before closing the eyes).

Mouth: The lips are parted at the center of the mouth and the front teeth are slightly parted.

Throat: There is an absence of motion and the neck is centered with midline.

Shoulders: Shoulders are rounded (dropped) and symmetric.

Body: The body is still. The torso, hips, and legs are symmetric in regard to midline. The muscles are still and the body is fully supported by the chair.

Hands: The hands should rest on chair arms or lap. The fingers are still and should be gently curved.

Feet: The feet and toes are still. The toes are pointed away from each other such that the feet form a V.

Quiet: You should make no vocalizations or loud respiratory sounds.

Breathing: Breathing pattern should be slower than when aroused, deep, and regular in rhythm. After getting into a relaxed state, just simply remain still and enjoy this state for 10–20 minutes. If you feel yourself becoming more tense, review the list of relaxed behaviors. If you have trouble with worrisome thoughts, try focusing on your breathing and thinking about breathing out tension, and breathing in deeper relaxation.

(Adapted from Poppen, R. (1988), *Behavioral Relaxation Training & Assessment*, New York: Pergamon Press.)

Seeking Professional Assistance. Health psychologists and other behavioral medicine specialists regularly teach relaxation skills to help individuals cope with medical problems or reduce health risks. A health psychologist can also assist those who have difficulty learning to relax when a more individualized relaxation program is required. If you have difficulty finding a health psychologist, ask your health care providers for a referral, call your state psychological association, or contact a behavioral pain management program. This article is in no way intended to replace the knowledge or diagnosis of your doctor. We advise seeing a physician whenever a health problem arises requiring an expert's care.



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Center Director

Yehuda Ringel, MD
Center Associate Director
Director, Functional GI Clinic

CLINICAL TEAM

Spencer Dorn, MD, MPH
Director, GI Medicine Clinic

Ryan Madanick, MD
Director, GI and Hepatology
Fellowship Program

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Director, GI Motility Lab

Lisa Gangarosa, MD
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GI Motility Services

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Pelvic Floor Biofeedback
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Administrative Services

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Associate Professor of
Medicine

Miranda van Tilburg, PhD
Associate Professor of
Medicine

Olafur Palsson, PsyD
Professor of Medicine

Kirsten Ambrose, MS
Project Manager

Renuka Kelapure
Project Manager

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Laverne Milliken
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Center Coordinator

Megan Squires, MPH,MSW
Research Coordinator

Angela Kibiy, RN, MPH
Research Nurse



THE UNIVERSITY of NORTH CAROLINA at CHAPEL HILL
CENTER FOR FUNCTIONAL GI & MOTILITY DISOR-
DERS
CB 7080, Bioinformatics Building
Chapel Hill, NC 27599-7080

Phone: (919) 966-0144
Fax: (919) 966-8929

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