



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.

NORTH CAROLINA CONGRESSMAN DAVID PRICE VISITS THE CENTER

Article written by Dane Christiansen
Development Coordinator IFFGD



Center Co-Directors Douglas A. Drossman and William E. Whitehead with Congressman David Price (center)

At the beginning of the year UNC Center for Functional GI & Motility Disorders Research co-Directors Douglas A. Drossman, MD and William E. Whitehead, PhD asked Congressman David Price (D-NC-4th) to consider using one of his few short breaks from legislating in Washington, DC to visit the facility. The Congressman graciously accepted this invitation, and on Monday, March 8th he and his staff traveled to Chapel Hill for a tour of the Center and series of information sessions on the important work the Center conducts.

Congressman Price has served in the U.S. House of Representatives for over 20 years, representing the Center since its establishment in 1994. He received his B.A. from UNC in 1961, and has long been a Congressional champion of the University's programs and the nation's medical/clinical research infrastructure. Congressman Price is a senior member of the powerful House Appropriations Committee which crafts the annual appropriations bills that fund all federal programs, including research-oriented agencies like the National Institutes of Health (NIH).

Dr. Drossman and Dr. Whitehead took the opportunity while meeting with Congressman Price to encourage him to support legislative initiatives that bolster functional GI disorders research. Most notably, they asked the Congressman to take a leadership role on the IBS and Functional GI Disorders Research and Treatment Act (IBS Act) and see that the bill is introduced in the House. To support this request, Congressman Price was

presented with a petition letter that urged introduction of the IBS Act and contained the signatures of over 150 GI physicians, researchers, and related health care professionals from across North Carolina.

The International Foundation for Functional GI Disorders (IFFGD) crafted the IBS Act in concert with leading experts on GI research and treatment from across the country. This landmark piece of legislation would focus federal resources on stimulating new functional GI disorders research and expanding ongoing activities. This legislation would also establish and support a network of academic centers to conduct further basic and clinical research.

The experience and reputation of the UNC Center for GI & Motility Disorders Research would allow it to compete well for the new resources and funding mechanisms established by the IBS Act. These additional resources could help the Center grow and more effectively advance its mission. Dr. Drossman and Dr. Whitehead are planning to travel to Capitol Hill in early April to follow-up with the Congressman and his staff on this important issue.

When the Congressman and his staff left Chapel Hill they expressed their gratitude and appreciation for the opportunity to learn more about the Center's important work. The Congressman also re-affirmed his commitment to serving the Center and its staff

Continued on next page

ABOUT THE IBS AND FUNCTIONAL GI DISORDERS RESEARCH AND TREATMENT ACT

The IBS and Functional GI Disorders Research and Treatment Act is a landmark piece of legislation, which would move the science of Functional GI Disorders research forward in an unprecedented way and address many of the persistent issues patients suffer with. Specifically, this bill would:

- Expand the research portfolio for Functional GI Disorders at the National Institute of Diabetes and Digestive and Kidney Diseases, and improve coordination of research activities conducted through the National Institutes of Health.
- Establish the operation and development of academic centers of excellence to conduct research and train healthcare providers.
- Provide support for training new investigators who specialize in Functional GI Disorders.
- Facilitate the creation and implementation of a guidance document by the Food and Drug Administration for industry regarding the development of treatments, and the consequences of adverse events that may occur during post-market surveillance.

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. The following are among the Center's valued sponsors:

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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 co-directors are **Douglas A. Drossman, MD**, Professor of Medicine and Psychiatry, and **William E. Whitehead, PhD**, Professor of Medicine and Gynecology.

For more information about the Center, please visit our website at

WWW.MED.UNC.EDU/IBS

DIGEST

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FACULTY PROFILE

Stephan Weinland, PhD
Assistant Professor of Medicine

What is your title here at UNC?

I am a clinical psychologist and assistant professor of medicine here at UNC—but the main focus of my efforts is working at the Center for Functional GI & Motility Disorders, seeing patients and conducting research in the area of Functional GI Disorders.

Give an example of a typical day.

I try to live each day in a way that I also ask my patients to live theirs. I incorporate a little bit of self care, family time and exercise in and around my work schedule. A typical work day for me involves time both in the hospital and around the bioinformatics building. I see a variety of patients who have behavioral medicine concerns – meaning they are dealing with issues at the borderline between psychological and biomedical illness. I see both inpatients and outpatients at times and work with people in more traditional psychotherapy services as well. The other part of my day will be spent working collaboratively with other researchers and research assistants to advance some of the projects we've been working on as a center. Finally, both before and after work I try to incorporate a brief run, some family time and additional time for self care.

Currently you are the Principal Investigator in a few studies. What are the studies trying to find out and have you had much success?

We are always working on a range of projects at the center, all of which involve exciting developments and changes in the field of functional GI disorders. A few of my projects involve utilizing new technologies to assess patient symptom experience in a more time

specific fashion. Often, research studies will ask participants to record their symptoms experience across the whole day at one fixed point in time (usually at night before bed time). A broad range of research is developing to show that this type of data collection may not be accurate. For symptoms that can change rapidly from hour to hour across the day, asking questions about symptoms at one particular point in time may open up that assessment to problems with recall or recency effects. Recency effects mean that patients are usually better able to recall symptoms that are most closely related in time to the time of measurement. Recall bias occurs when we cannot recall accurately what our symptom experience was at various points across the day. Two of my studies are using pocket PCs to look at patient symptom experience this way. I'm also working on a number of projects that look at qualitative characteristics of GI symptom experience.

I understand you are a Psychologist and not a GI doctor. What is the importance of having a Psychologist working alongside GI physicians and researchers?

Having a psychologist contribute to patient care allows for a broader range of problems to be addressed than would typically be handled well in GI. Many of the disorders that GI physicians see on a regular basis can be affected by present life circumstances, past histories of events, and current difficulties with adjustment. Also, many times I have the ability to work with patients for more extended periods of time than most physicians do. This allows us to put together effective ways to manage symptom experience and avenues for improving quality of life overall.

What sort of education do you have?

Psychologists go through an extensive training and licensing processes in order to see patients. In addition to the Bachelors degree (Psychology and Communications from Virginia Tech), I have completed a Masters degree in psychology (Illinois Tech) and a Ph.D. in psychology (also at Illinois Tech) as well. I'm quick to note however that I don't confuse schooling with education. I learn every day from supervisors, mentors, patients and life experiences. With as much education as we have it sounds weird to say that we "practice" psychology. In order to practice in North Carolina however, one is required to have completed a Ph.D. or Psy.D, a one year internship as well as a post doctoral year of study. All of this and over 7500 hours of supervised clinical work is needed before you finally get to work with a patient one to one. My internship and post doctoral experiences all focused on working with patients with medical illness. While I had not previously worked in GI extensively, all of the principles learned in working with patients experiencing chronic pain, heart disease and cancer often come into play in everyday practice in the GI clinic as well.

When did you start working here at UNC?

October 3, 2006, so it's been almost four years now. I love the challenges presented every day by patient symptom experiences and I also enjoy conducting research and watching the field of functional GI disorders grow and change.

Did you always want to work in GI?

Not actually. I always knew that I wanted to work in behavioral medicine. I find the

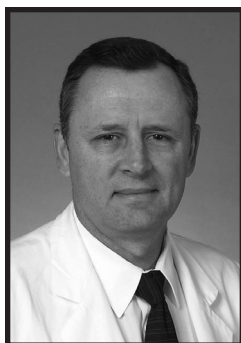
intersection between the body and mind to be fascinating and no other area of behavioral medicine demonstrates this more clearly than GI. There's a reason people say that they get "butterflies in their stomach" whenever they get nervous – in a small way, that highlights the benefits of working in GI. There's a clear connection, and people understand that how they think can affect how they feel and what they do. I find it immensely rewarding to work in this area.

Before UNC, did you work abroad?

For my post doctoral training I worked in the United Kingdom for their National Health Service for just under two years. It was an amazing experience and I was able to get a great idea of what working for such a healthcare system means. Having been trained in Chicago and Miami has also given me the opportunity to work with a very diverse patient population. My experience in working with international patients in a diverse environment is a part of my training that I really value. I think it provides a broad range of experiences that I draw from in working with all patients.

Anything else you want to share?

For patients who recognize that life events and circumstances play a role in their approach to health, working with a psychologist can be beneficial. What is truly important is not necessarily what has happened in the past, but the present moment and moving forward. Patients make choices every day that affect well being, and psychologists, just like physicians, work together with patients to improve quality of life.



BIOFEEDBACK WAS SHOWN TO BE AN EFFECTIVE TREATMENT IN TWO RANDOMIZED CONTROL TRIALS FOR PELVIC FLOOR MUSCLE DISORDERS

Steve Heymen, PhD
Assistant Professor of Medicine

RANDOMIZED, CONTROLLED TRIAL SHOWS BIOFEEDBACK TO BE SUPERIOR TO ALTERNATIVE TREATMENTS FOR PATIENTS WITH PELVIC FLOOR DYSSYNERGIA-TYPE CONSTIPATION

Steve Heymen, Ph.D. • Yolanda Scarlett, M.D. • Kenneth Jones, Ph.D. • Yehuda Ringel, M.D. • Douglas Drossman, M.D. • William E. Whitehead, Ph.D.

ABSTRACT

PURPOSE: This study was designed to determine whether biofeedback is more effective than diazepam or placebo in a randomized, controlled trial for patients with pelvic floor dyssynergia-type constipation, and whether instrumented biofeedback is necessary for successful training.

METHODS: A total of 117 patients participated in a four week run-in (education and medical management). The 84 who remained constipated were randomized to biofeedback (n = 30), diazepam (n = 30), or placebo (n = 24). All patients were trained to do pelvic floor muscle exercises to correct pelvic floor dyssynergia during six biweekly one hour sessions, but only biofeedback patients received electromyography feedback. All other patients received pills one to two hours before attempting defecation. Diary data on cathartic use, straining, incomplete bowel movements, stool consistency, and compliance with homework were reviewed biweekly.

RESULTS: Before treatment, the groups did not differ on demographic (average age, 50 years; 85 percent females), physiologic or psychologic characteristics, severity of constipation, or expectation of benefit. Biofeedback was superior to diazepam by intention- to-treat analysis (70 vs. 23 percent reported adequate relief of constipation 3 months after treatment, chi squared = 13.1, $P < 0.001$), and also superior to placebo (38 percent successful, chi-squared = 5.7, $P = 0.017$). Biofeedback patients had significantly more unassisted bowel movements at

follow-up compared with placebo ($P = 0.005$), with a trend favoring biofeedback over diazepam ($P = 0.067$). Biofeedback patients reduced pelvic floor electromyography during straining significantly more than diazepam patients ($P < 0.001$).

CONCLUSIONS: This investigation provides definitive support for the efficacy of biofeedback for pelvic floor dyssynergia and shows that

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RANDOMIZED, CONTROLLED TRIAL SHOWS BIOFEEDBACK TO BE SUPERIOR TO SUPERIOR TO PELVIC FLOOR EXERCISES FOR FECAL INCONTINENCE

Steve Heymen, Ph.D. • Yolanda Scarlett, M.D. • Kenneth Jones, Ph.D. • Yehuda Ringel, M.D. • Douglas Drossman, M.D. • William E. Whitehead, Ph.D.

Full report at <http://www.nature.com/nrgastro/journal/v6/n12/full/nrgastro.2009.193.html>

ABSTRACT

PURPOSE: This study aimed to compare manometric biofeedback with pelvic floor exercises for the treatment of fecal incontinence in a randomized controlled trial controlling for nonspecific treatment effects.

METHODS: After excluding patients who were adequately treated with medication, education, and behavioral strategies (21%), 108 patients (83 females; average age, 59.6 years) underwent either pelvic floor exercises alone (n = 63) or manometric biofeedback plus pelvic floor exercises (n = 45). Patients in both groups were taught behavioral strategies to avoid incontinence.

RESULTS: At three-month follow-up, biofeedback patients had significantly greater reductions on the Fecal Incontinence Severity Index (P 0.01) and fewer days with fecal incontinence (P 0.083). Biofeedback training increased anal canal squeeze pressure more than pelvic floor exercises did (P 0.014) and with less abdominal tension during squeeze (P 0.001). Three months after training 76% of patients treated with biofeedback vs. 41% patients treated with pelvic floor exercises (chi squared 12.5, P 0.001) reported adequate relief. Before treatment, the groups did not differ on demographic, physiologic, or psychologic variables, symptom severity, duration of illness, quality-of-life impact, or expectation of benefit. At 12-month followup, biofeedback patients continued to show significantly greater reduction in Fecal Incontinence Severity Index scores (F 4.83, P 0.03), and more patients continued to report adequate relief (chi-squared 3.64, P 0.056).

CONCLUSION: This investigation provides definitive support for the efficacy of biofeedback. Biofeedback training resulted in greater reductions in fecal incontinence severity and days with fecal incontinence. Biofeedback was also more effective than pelvic floor exercises alone in producing adequate relief of fecal incontinence symptoms in patients for whom conservative medical management had failed.

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WHAT IS PELVIC FLOOR BIOFEEDBACK?

Mary Scholz, RN, PhD
Pelvic Floor Biofeedback Therapist

Patients are referred for pelvic floor muscle biofeedback for management of constipation and fecal incontinence. Biofeedback as defined by The Association for Applied Psychophysiology and Biofeedback, The Biofeedback Certification Institution of

Over time, these changes can endure without continued use of an instrument.

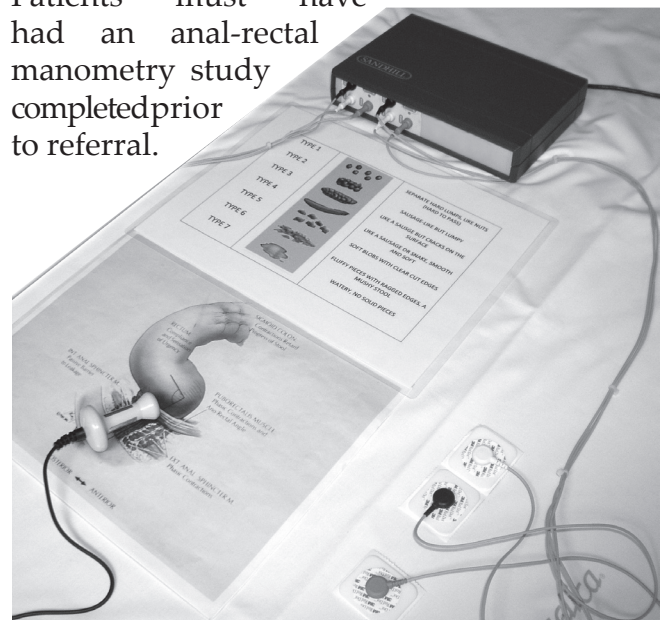
The average number of visits for pelvic floor training is 6 fifty minutes sessions, either weekly or every other week. Home practice of pelvic floor exercises are an essential part of success when going through biofeedback training.

Patients must have had an anal-rectal manometry study completed prior to referral.

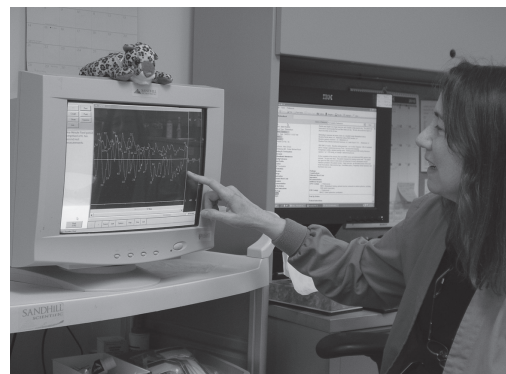


Kelly Verner and Nia Riggsbee are medical support assistants in GI Procedures.

America and The International Society for Neurofeedback and Research (Approved May 18, 2008) "is a process that enables an individual to learn how to change physiological activity for the purposes of improving health and performance. Precise instruments measure physiological activity such as brainwaves, heart function, breathing, muscle activity, and skin temperature. These instruments rapidly and accurately "feed back" information to the user. The presentation of this information — often in conjunction with changes in thinking, emotions, and behavior — supports desired physiological changes.



Equipment used in the biofeedback lab include the rectal sensor and abdominal muscle sensor



Mary Scholz is the therapist for the biofeedback lab



INTERACTIVE THEATRE GRANT

Ben Saypol

Just before the new year, Dr. Douglas Drossman of the The UNC Center for Functional GI Disorders, and Ben Saypol, Program Coordinator of Interactive Theatre Carolina at UNC Chapel Hill received an educational grant from Takeda Pharmaceuticals “to use Interactive Theatre to observe, analyze, and practice behavioral strategies to improve doctor-patient communication in a culturally competent manner.” And right after the new year, the creative process began.

Dr. Drossman has been focusing on improving doctor-patient communication throughout his career and has always sought out new and innovative ways to help physicians, fellows, residents, and medical students learn these skills. He has conducted monthly clinical skills seminars for over 25 years, and the sessions are attended by GI fellows, faculty, residents and research staff. After learning about Interactive Theatre Carolina, he initiated collaboration with Saypol.

Interactive Theatre Carolina, a two and a half year old program of Counseling and Wellness Services, “uses scripted and improvisational theatre to promote health, wellness, and social justice in the University of North Carolina, Chapel Hill community.” Saypol explains, “Our work is based on the premise that when audience



(Photo by Ryan Jones)

The characters Kevin and Eric praise female celebrities and their bodies in “A Work of Art”, Interactive Theatre Carolina’s performance on sexism.

ABOUT THE ARTIST

Ben Saypol has been working in interactive and community based theatre for five years and is an emerging leader in the field. He is currently the Program Coordinator of Interactive Theatre Carolina, a program he and his students built from the ground up at the University of North Carolina, Chapel Hill. He also serves as Co-Chair of the Interactive Theatre Subcommittee for the Association for Theatre in Higher Education. Previously, he was the Assistant Director of the Interactive Theatre Project at the University of Colorado at Boulder. Ben has studied Theatre of the Oppressed and other community based Interactive Theatre techniques with Augusto Boal, Julian Boal, Marc Weinblatt, Michael Rohd, Jeffrey Steiger, and others. He also is completing his PhD in Theatre at CU Boulder, with his dissertation focusing on the Facilitation of Interactive Theatre performances in the university campus community. He holds a BA in American Culture with a Certificate in Musical Theatre from Northwestern University and a Masters of Music, Vocal Performance from the University of Colorado at Boulder. He also worked as a professional actor for five years.

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members have the opportunity to engage the characters and conflict on stage, they are more likely to explore and change their own attitudes and behaviors.”

“The performances we create have several goals,” explains Dr. Drossman, but they all involve a patient-centered approach and a facilitative style of communication. We want the doctor to clarify and accept the patient’s perspective on each issue and engage in a dialogue to reach a common understanding and set of goals.”

He goes on to say that this grant will help clinicians to develop skills such as *active listening*, a *facilitative questioning* style, developing and expressing *empathy*, and *managing one’s own emotions* in the exam room.

The Interactive Theatre performances will consist of three parts that intertwine throughout: a series of realistic scripted vignettes involving doctors and patients, the opportunity for audience members to interact with the both characters (the actors remain in their roles throughout), and post performance conversation, where audience members can have a dialogue about their reactions to the scene, as well as propose solutions for improving the communication for the future.

Different techniques are used to get audience members involved on stage, including a “question-answer” section between the audience and the characters and “intervention theatre,” which gives the opportunity for

audience members to go up on stage, replace the doctor, and try an alternative communication strategy with the patient.



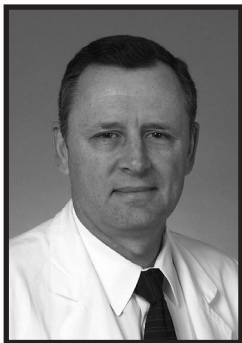
Audience members at Interactive Theatre Carolina’s performance of “A Work of Art” trade perspectives on sexism. (Photo by Ryan Jones)

As of now, Dr. Drossman and Saypol, along with a diverse team of doctors from the Center, are engaged in the creative process to script the vignettes. This process consists of research, interviews, brainstorming, outlining, role playing, and writing. After Saypol completes the vignettes, they will be cast and rehearsed in advance of performance. The first of a series of performances is slated for June.

For more information on Interactive Theatre Carolina, please go to: <http://campushealth.unc.edu/itc> and for more information on the UNC Center for Functional and GI Motility, please go to: <http://www.med.unc.edu/medicine/fgidc/>



The interactive theatre conferences will be conducted at Dr. Drossman’s clinical skills evening sessions held monthly.



CONSERVATIVE TREATMENT OF FECAL INCONTINENCE (FIX) IN THE ELDERLY: EFFECTIVENESS TRIAL

Steve Heymen, PhD
Assistant Professor of Medicine

Fecal incontinence (FI) affects 9% of U.S. adults and occurs weekly or more often in 2.7%. Prevalence increases with age reaching 15% by 70 years. FI has a devastating impact on quality of life and increases the likelihood that an elderly patient will be admitted to a nursing home: 47% of nursing home residents have FI compared to 15% of non-institutionalized older adults. We speculate that if effective conservative treatment were available in the community it would be possible to reduce the severity of FI to a level that patients and their families could cope in the community without recourse to nursing home admission.

FIX treatment. Our first version of the conservative treatment protocol incorporated medical management (fiber/anti-diarrheals) to normalize stool consistency, patient education about the pathophysiology of defecation (in laymen's terms), behavioral tips on how to avoid bowel accidents, and symptom monitoring with frequent feedback from a therapist who made adjustments in the treatment recommendations to optimize outcomes for the individual patient. This treatment protocol produced 60% reductions in the frequency of FI in a 30-day trial. We modified this treatment program by adding pelvic floor exercises and simplifying the symptom diary, and named it FIX (for Fecal Incontinence Rx). We subsequently pilot tested the modified version in a small group of UNC patients with FI, and then at 3 local Continuing Care Retirement Communities (CCRC). We collected feedback from all these patients as well as the nurses who provided Tx at the CCRCs and further modified the treatment protocol by adding a brochure that serves as a reminder/quick reference to explain to patients how to perform pelvic floor exercises, how to adjust the dose of antidiarrheal medication or laxatives to normalize stool consistency, and how to anticipate and avoid FI episodes. Although not requested by patients, we also developed a comprehensive DVD with instructions on how

to perform pelvic floor exercises and behavior techniques to prevent FI.

We recently proposed an effectiveness trial in a grant application to AHRQ to determine whether this conservative intervention which has been shown to be effective in single-site studies will sustain its efficacy when disseminated to a home bound population by home health care nurses. To minimize drift when the treatment is disseminated to a large group of providers, patient education and other basic components of treatment are included in a DVD; however, nurse supervision to individualize treatment remains important. The study will be carried out in 4 counties in central North Carolina which are served by the University of North Carolina Home Health Care agency, our partner in this study [if our application is successful, we will not be recruiting subjects through the general population, but will recruit through the UNC Home Health Care agency]. Specific aims are (1) to show that the active treatment is more effective than the control treatment (waitlist counties) for improving FI severity, patient quality of life, and caregiver burden, and that improvements are maintained for at least 6 months; (2) to identify moderators of treatment effectiveness (candidate variables are cognitive status, mobility impairment, availability of a willing family caregiver, anxiety, depression, age, and race); and (3) to explore whether successful treatment of FI reduces the risk of nursing home referral.

In this application we proposed a limited dissemination to a home health care agency affiliated with our hospital. However, our long-term goal is more ambitious: we hope to disseminate the FIX treatment to primary care physicians and nurse practitioners, to validate its effectiveness when used by these professionals, to evaluate the impact on quality of life for patients and caregivers, to determine whether it has an impact on nursing home admissions, and to assess the impact of this dissemination on health care costs.

CENTER AWARDED STIMULUS GRANT TO STUDY THE PSYCHOPHYSIOLOGY OF IBS

William E. Whitehead, PhD
Center Co-Director



The Center received a “stimulus grant” for \$91,324 to further our research on the causes of irritable bowel syndrome. This was an administrative supplement to our Psychophysiology of IBS grant, with the funds coming from the American Recovery and Reinvestment Act.


The grant for which we received this supplement is an NIH grant to study the physiological and psychological causes of IBS. This is a long term quest—the grant is currently in its 22nd year of continuous funding – and the goals of the grant have evolved over this time. In the last 5-year cycle, we found that there are subtypes of IBS that appear to be distinct from each other and that may require different treatments. The four subtypes were (1) a group of patients whose dominant symptom is pain sensitivity, (2) a group with extreme psychological distress and many other types of somatic symptoms occurring in combination with their bowel symptoms, (3) a group whose dominant symptom is diarrhea, and (4) a group who have chronic constipation.

In the current 5-year cycle of the grant, we are attempting to identify genetic risk factors that

may predispose people to develop one of these subtypes of IBS. We do this by recruiting IBS patients to participate in an extensive battery of tests to characterize which type of IBS they have and then we draw blood to identify genetic variations (differences in single nucleotide polymorphisms or SNPs) that may distinguish these subtypes from each other and from healthy subjects. We are also collecting information on environmental exposures – things like food poisoning or psychological trauma – that may interact with these genetic variations to trigger the development of IBS.

This administrative supplement (3R01 DK031369-21A1S1) will help us complete the study more quickly and enable us to test a larger number of subjects. The money is being used to pay for recruiting and scheduling subjects and for some of the costs of analyzing the DNA (genes). The costs of testing the genetic samples increased after our primary grant was submitted and without this supplement, we would have been unable to test as many subjects as we believe we need.

UPCOMING CHAT SCHEDULE

		
May	The Stress Response of Functional GI Disorders	<i>Stephan Weinland, PhD</i>
June	Narcotic Bowel Syndrome	<i>Douglas Drossman, MD</i>
July	Biofeedback for Pelvic Floor Disorders: Fecal Incontinence, Constipation, and Rectal Pain	<i>Steve Heymen, PhD & Mary Scholz, RN, PhD</i>



CONTINUING MEDICAL EDUCATION: UPDATE IN GASTROENTEROLOGY APRIL 16-18, 2010

Ryan Madanick, MD
Assistant Professor of Medicine

From April 16th to 18th, 2010, the Division will again be putting on our annual CME course at the Friday Center in Chapel Hill. With the continually-expanding breadth and depth of the Division's faculty members, this year's course should prove to be one of the most stimulating programs yet. The program will feature 5 main sessions of talks. In addition to a session on Functional GI Disorders, there are also sessions dedicated to Inflammatory Bowel Disease, Esophageal Disease, Neoplasia in the GI tract, and Hepatology.

As a testament to increasing recognition of Functional GI Disorders, one of the talks in the IBD section and one in the Esophageal session will cover issues about functional bowel disorders within other subspecialties of gastroenterology. Dr. Hans Herfarth, a member of the Center for Inflammatory Bowel Disease, will discuss the co-existence of IBS and IBD.

Dr. Ryan Madanick, a member of both the Center for Esophageal Diseases and Swallowing (CEDAS) and the FGID Center, will discuss Refractory GERD, a topic that encompasses both the organic and the functional components of esophageal disorders. This year, we are also excited to host Dr. Michael Camilleri, Director of

the Clinical Enteric Neuroscience Translational and Epidemiological Research Program at Mayo Clinic and a world-renowned expert in motility and functional bowel disorders, as the keynote speaker, who will give the John Sessions Lecture about the history, current status, and future directions of the management of irritable bowel syndrome.

In the Functional GI Disorders section, Co-Director Douglas Drossman will give a talk on "The Narcotic Bowel Syndrome," and Co-Director William Whitehead will speak on "Obstructed Defecation and Chronic Rectal Pain." Dr. Spencer Dorn will discuss "Dietary Modification and IBS: Food for Thought."

The year's course will again include 12 interactive breakout groups, including sessions about Dyspepsia, led by Drs. Spencer Dorn and Michael Camilleri, and Maximizing the Patient Interview, led by FGID Center Co-Director Dr. Doug Drossman and Christine Dalton, PA-C. For more information, to see the complete program, and to register, contact Jennifer Mayfield (jennifer_mayfield@med.unc.edu) or go to <http://www.med.unc.edu/cme/events/2010-update-in-gastroenterology-and-hepatology>.

GREETINGS FROM CHILE

Daniel Cisternas, MD

Universidad Católica de Chile

Being a gastroenterologist from Chile that had just finished a clinical and research fellowship in motor and functional GI disorders in Vall D'Hebron Hospital, Barcelona, I decided to visit UNC unit before I went back to Chile, to see how difficult patients are treated in a world-leading center.

I would have to say that what I saw was far beyond my expectations. I had a lot of interesting meetings, and I learned a lot about many things, like attending the clinics with Dr. Drossman. It was an honor for me to see him work. I learned a lot about acquiring a good doctor-patient relationship, how to handle expectations, and how to handle emotional moments. I had to read a lot about psychological and psychopharmacological treatments, which opened my eyes to a lot of new things. It is very helpful to someone like me being able to see refractory cases from all over the US.

I also attended the research meetings. I was impressed by the quality of teams working there. The way research work is organized is something that I will definitely try to replicate in the future.

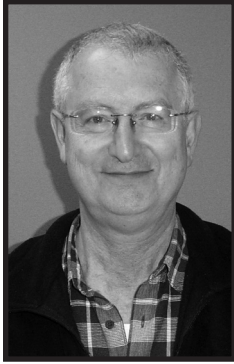
I also had the opportunity to observe the work of Dr. Whitehead, Mary Scholz and Steve

Heyman on anorectal biofeedback, which was very interesting to me, as this is not a completely standardized technique, and sharing experiences with leaders in the field is very helpful.

A couple of afternoons I could make a walking tour through the campus, and I have to say that seems to be the perfect place to study. I would have loved to spend hours reading in the gardens surrounded by squirrels. I loved Chapel Hill.

But beyond all that, I have to deeply thank all the staff, starting with Drs Drossman and Whitehead, that showed real care about my stay. I felt at home. I always say that creating a protective environment is essential for the learning process. I really felt confident to ask questions, including the non-intelligent ones! I really thank you not only for creating new knowledge, but for being always willing to share it.

I really enjoyed my stay. I will never forget the southern charm and hope to come back soon.



MEMORIES OF AN EXTRA-TERRESTRIAL FROM THE FUNCTIONAL GI CLINIC AT UNC

Joseph Zimmerman, MD

"Dr. Z, your patient is in room four," Tina, the clinic nurse sprayed me in her staccato speech as she glanced at the schedule posted on the wall and marked a "v" next to the patient's name. I was sitting in the Doctor's room reviewing the documents of my next patient.

At the beginning, it appeared straightforward:

Mrs. X, a woman in her 50's with a long-standing abdominal pain. Her voluminous chart compiled numerous doctor visits and whatever diagnostic test that you may have in mind. You name it, she's had it. All of them: EGD, colonoscopy, abdominal ultrasound, CT scans, MRI's. The first doctor she saw thought it may have been her gallbladder that had gone awry. So he did an abdominal ultrasound. The results: normal gallbladder.

No evidence of gallstones or other structural lesion. By further pursuing his concept, her M.D. ordered a biliary scan. Maybe the gallbladder does not contract as it should, causing Mrs. X such a bad pain. So a biliary scan was performed. The gallbladder did appear to contract somewhat poorly. So, it was decided to take it out. After surgery (uneventful, we should say), pain persisted. She did note, though, that her stools became loose and she had to move her bowels after each meal. She returned to her doctor, still complaining of pain. If it's not your gallbladder, then it must have to do with your sphincter of Oddi, the valve that controls the discharge of bile and pancreatic secretions into the small bowel. We can fix that for you. So Mrs. X went in for an

ERCP and sphincterotomy. This procedure was complicated by severe pancreatitis, for which Mrs. X was in hospital for 2 weeks. Thanks to God, her doctors and antibiotics she made a complete recovery. And what about her pain? It was still there. Nagging, persistent.

In fact, it has become worse, to the point that

narcotics were needed to control it. Mrs. X had no choice but to start shopping around for remedy. She visited several major medical centers. Those spectacled doctors, mummified in their white coats looked into her entrails. They measured some pressures in her gut. They made her swallow a tiny camera that would take pictures of her inside. There are lots of things out there in the marketplace. They explained to her things that she did not understand. Yet, her pain persisted.

When conventional medicine has failed, in

came all the alternative wizards. She saw a bunch of them: sphincterologists, naturopaths, healers by faith, healers by touch, macrobiotic dietitians, microbiotic dietitians. Nothing helped. Eventually, she found her way to the UNC Functional GI Disorders clinic. Browsing through her documents, one could glean a wealth of information about her anatomy, her physiology, her chemistry, her histopathology. Yet, there was nothing there about her as a person. As a human being. What were her life circumstances. Why has she divorced her husband. How does she feel as a patient afflicted by a chronic condition that no one could explain to her or even find a suitable title for. There she was, in room four, waiting for cure.

"You have an accent," she marked.

"Yes," I admitted.

"I am from Israel."

"Oh, the land of the Bible."

She was pleased.

"I hope you are the one that is going to save me.

You are my Messiah."

"I'll try my best," I said.

I knocked on the door and came into the room. She was sitting there, shrunk in the chair. I introduced myself. We shook hands.

"You have an accent," she marked.

"Yes," I admitted. "I am from Israel."

"Oh, the land of the Bible." She was pleased.

"I hope you are the one that is going to save me. You are my Messiah."

"I'll try my best," I said.

After discussing her bodily symptoms, the interview went on to focus on her personal issues. Her psychological sphincters; her emotional barriers. All of a sudden, without a premonitory sign, she burst into tears. I handed her a box of tissues, an indispensable item in this clinic. She wiped her tears, and went on with her life story: Growing up in a small farm; an abusive, alcoholic father; Sexual abuse starting at age 4 by her uncle and a neighbor; Marriage to an abusive, physically violent man whom she later divorced; It all poured in an avalanche. After all this came out, she sighed.

"You know, doctor, I have seen so many doctors before I came here and nobody asked me these questions... Do you think what I've just told you is relevant?"

The patient described in this memoir is entirely fictitious. Mrs. X is actually a composite of numerous patients I have seen during my 15-month period in UNC.

In this era of hi-tech medicine, when doctors are more interested in imaging, performing endoscopies, laparoscopies and other minimal invasive procedures that sometimes culminate in not-so-minimal adverse outcomes, the functional GI disorders clinic at UNC remains a unique place where medicine is preserved as it should be, a humane profession. A place where a patient is regarded as a person and not as a sequence of nebulous shapes and forms seen on MRI and CT scans.

I would like to dedicate this memoir with deep respect to Dr. Drossman. I would also like to thank all the physicians, PA's, nurses and staff of the Functional GI Disorders clinic and of the GI division. And most of all, I would like to thank the patients I have had the privilege to take care of on my sabbatical. This was really a significant experience for me, one I'll never forget.

ABOUT THE DOCTOR

Dr. Joseph Zimmerman is a graduate of the Hebrew-University-Hadassah Medical School in Jerusalem, where he completed his residency in Internal Medicine and a fellowship in Gastroenterology.

During his stay in UNC, Dr. Zimmerman served as adjunct faculty in the functional GI and Motility clinic and the Division of Gastroenterology and Hepatology. He also participated in the research programs at the UNC Center for Functional GI & Motility

Disorders and worked to validate some of the scales he had previously developed for measurement of symptoms in the English language. He also studied the course and results of detoxification protocol in treating narcotic bowel syndrome.

VISITING FELLOW

Charlene LePane, DO
St. John Oakland Hospital, Madison Heights, MI

It is with great pleasure that I compose this submission for your newsletter. I am currently completing my second year in training as a gastroenterologist in the Detroit Metropolitan area in Michigan.

As a first year fellow I was exposed to an inordinate amount of patients who exhibited the wide variety of symptoms that encompass “functional bowel disorders”. Such was my intractable curiosity, that I requested an elective so that I could possibly work at an academic institution that focused on this subspecialty in gastroenterology. When it was granted, I explored the various institutions that provided this sort of discipline. The one institution that stood out time and time again was UNC Medical Center. From some preliminary research I did on the topic, it was clear that Dr. Doug Drossman was the leading authority in functional bowel disorders, and that UNC was the only center that could provide the education I was seeking. I recall sending Dr. Drossman an informal email requesting “elective” time there, and I was utterly surprised when I received a response the very next day. He said “we would be pleased to have you here at UNC”.

I traveled to North Carolina and began a two-week rotation with Dr. Drossman and the functional bowel disorder team in October of 2009. Upon my arrival, I received a warm welcome and thorough tour by both Ceciel

Rooker and Dr. Stephen Kennedy. The facility was impressive and the faculty displayed a high level of expertise and professionalism. I was invited to interact with the research team lead by Dr. William Whitehead and had the opportunity to ask questions regarding past, current, and future clinical trials which UNC was leading.

Throughout the remainder of my time there, I was invited to participate with the team interacting with patients in the clinic. I was extremely impressed by the multidisciplinary approach the team took to evaluate and treat patients in the clinic. Furthermore, I had the opportunity to discuss these cases one on one with Dr. Drossman who was a pleasure to work with. He provided me the exact education I was seeking in order to become a more well-rounded gastroenterologist. I have no doubt that this exposure will help me better manage patients who have functional bowel disorders.

I am writing this letter to not only to thank the staff at UNC Medical Center for providing me this exceptional opportunity, but to mention also that Chapel Hill is an extraordinary town and I would recommend any gastroenterology fellow to embrace this opportunity. I hope to return in the near future to visit.



TREATMENT STUDIES

RESEARCH SUBJECTS NEEDED

Writing and IBS	<p>Boston University School of Medicine is doing an online survey about expressive writing and Irritable Bowel Syndrome. The purpose of the study is to investigate the effects of writing on the management of IBS.</p> <p>Participation</p> <ul style="list-style-type: none"> • Must be 18-75 years old. • Must be diagnosed with IBS by a physician. • Must live in the United States. 	<p>Principal Investigator Albena Halpert, MD ibs.study@bmc.org</p>
Narcotic Bowel Study	<p>We plan to characterize the nature of the Narcotic Bowel Syndrome population and their response to treatment (i.e., detoxification). This will be an observational study. If you have chronic abdominal pain from any medical condition that is treated with high-dose narcotics, you could be eligible to participate in this study.</p> <p>Participation</p> <ul style="list-style-type: none"> • Research assistants will contact patients during treatment at: pre-detoxification, post-detoxification, and three and six month follow-up. • At each time, the patient will complete questionnaires relating to treatment including symptoms, demographic information and psychological effects. 	<p>Principal Investigator Douglas A. Drossman, MD</p> <p>Research Assistant Christina Davis (919) 966.0729 christina_davis@med.unc.edu</p>
Lubiprostone Effects on Visceral Pain Sensitivity	<p>Clinical trials of Lubiprostone have shown that this medication decreases clinical pain associated with IBS. The goal of this study is to determine how this medication works to decrease pain. We predict that it works by decreasing pain sensitivity.</p> <p>Participation</p> <ul style="list-style-type: none"> • Must be age 18 or older. • Must be diagnosed with constipation predominant IBS. • Do not participate in this study if you are using IBS specific drugs or medications likely to cause constipation, or you are pregnant or planning to become pregnant. • This is a 6 week study that requires taking Lubiprostone or a placebo for 2 weeks each. • Subjects will be paid up to \$500 for completing this study. 	<p>Principal Investigator William E. Whitehead, PhD</p> <p>Research Nurse Jane Tucker, RN (919) 843.4906 jane_tucker@med.unc.edu</p>
Men and Women with IBS and Chronic Functional Abdominal Pain	<p>The purpose of this study is to try to improve functional bowel disorder symptoms with a combination of Seroquel and anti-depressant medication. Seroquel is an FDA-approved medication that is currently on the market and used in the GI clinic.</p> <p>Participation</p> <ul style="list-style-type: none"> • Must be at least 18 years of age. • Must have been diagnosed with functional bowel disorder within the past 6 months. • Must be on an anti-depressant medication for at least the past four weeks. • Study entails seven visits at UNC hospital over a 12 week period, Seroquel treatment once a day for 8 weeks, and \$350 compensation for completion. • Some visits involve a brief physical and lab work, which are free to the patient. 	<p>Principal Investigators Douglas A. Drossman, MD Stephen Weinland, PhD Christine Dalton, PA-C</p> <p>Research Assistant Ashley Messina (919) 966.0147 amessina@med.unc.edu</p>

RESEARCH SUBJECTS NEEDED

CAUSES OF SYMPTOMS STUDIES

Genetic and Environmental Factors that Cause or Influence IBS

This study involves measuring the relationship between genes, the environment, and various psychological and health factors in men and women with IBS. Individuals who participate will spend one overnight visit in the Clinical and Translational Research Center at UNC Hospital. No additional visits required.

Participation

- Must be 18 years or older
- Must be diagnosed with IBS by a physician.
- Participants completing the study will receive \$250.
- For more information on how to sign up please visit: www.uncmedresearch.com/ibs or call toll free 866-227-0067

Principal Investigator

William E. Whitehead, PhD

Research Nurse

Lenore Keck, RN
(919) 966.8329
akeck@med.unc.edu

Online survey for parents of children with soiling problems

Soiling in children is a common condition that is difficult for the child and the family. We are conducting a research study to find out what parents think are the causes of soiling in their children and what kind of therapies and strategies they use to help their children with the soiling. We are looking for parents of children 4-18 years old who regularly soil or poop in their underwear. You will be asked to complete the same online questionnaire twice, 2 weeks apart.

Participation

- Must be primary caregiver for a child ages 4-18 year old who regularly soils or poops in their underwear.
- Participants completing the study will receive \$10.
- To find more information and complete the questionnaires please go to: <https://uncfunctionalgi.net/fi/cgi-bin/fiquestionnaire.cgi>

Principal Investigator

Miranda van Tilburg, PhD

Research Assistant

Megan Squires
(919) 843.9755
megan_squires@med.unc.edu

IBS Partner Study: Postal Survey

The purpose of the research study is to learn how your Irritable Bowel Syndrome has affected your partner/spouse. We all know that when we are ill, this can have an effect on the people we live with, and we know from patients, that IBS very often affects relationship with their significant other. Interestingly, this has never been studied, and our study aims to specifically explore the effects of the symptoms of IBS on the relationship between you and your spouse or partner. We are also recruiting individuals with no significant medical history.

Participation

- Must complete a short survey via mail or internet.
- Participants completing the study will receive \$10.

Principal Investigator

Douglas A. Drossman, MD

Research Assistants

Christina Davis
(919) 966.0729
christina_davis@med.unc.edu

Ashley Messina

(919) 966.0147
amessina@med.unc.edu

Healthy Controls Needed for Research Study

We are conducting a research study investigating a broad range of factors that may cause or influence IBS. We are looking for subjects without IBS or any other gastrointestinal (stomach or bowel) symptoms to participate.

Participation

- Must be 18 years or older.
- Must have not experienced any gastrointestinal symptoms within the last 3 months.
- Must fill out various health questionnaires & physiological testing
- Involves one 4 hour visit to the Clinical and Translational Research Center at UNC Hospital.
- Participants completing the study will receive \$50.
- For more information on how to sign up please visit: www.uncmedresearch.com/ibs or call toll free 866-227-0067

Principal Investigator

William E. Whitehead, PhD

Research Nurse

Lenore Keck, RN
(919) 966.8329
akeck@med.unc.edu



CAUSES OF SYMPTOMS STUDIES

RESEARCH SUBJECTS NEEDED

IBS Pocket PC Study with Immodium	<p>The purpose of this research study is to learn about how bowel symptoms vary throughout the day and in response to stress. Patients must have IBS with diarrhea or a mixed pattern of diarrhea and constipation. The study will also monitor how symptoms and bowel habits change when taking Immodium, an antidiarrheal medication.</p> <p>Participation</p> <ul style="list-style-type: none"> • Must be 18 years or older. • Must have a history of IBS with diarrhea or mixed diarrhea/constipation for at least 6 months. • Four 45-minute study visits at UNC are required. • You must record your bowel symptoms, stress levels, and sleep habits daily for 14 days using a pocket PC device. • Upon completion of the study participants will receive \$300 	<p>Principal Investigators Douglas A. Drossman, MD Stephan R. Weinland, PhD</p> <p>Research Assistants Ashley Messina (919) 843.7828 amessina@med.unc.edu</p> <p>Christina Davis (919) 966.0729 christina_davis@med.unc.edu</p>
Online Study - Qualitative Analysis of Episodes of IBS	<p>We are looking for patients with IBS to complete an online survey which allows them to answer open-ended questions regarding their personal symptom experience. By examining these reports, we hope to gain a better understanding of how patient symptoms change over the course of an episode and to identify any patterns in symptom experience.</p> <p>Participation</p> <ul style="list-style-type: none"> • Must be currently experiencing symptoms of IBS. • Must be able to understand and communicate using written English. • No compensation is offered for this brief survey. • To take online survey, log on to: http://www.med.unc.edu/medicine/fgidc/qualitative_analysis.htm and click the link. 	<p>Principal Investigator Stephan R. Weinland, PhD</p> <p>Research Assistant Ashley Messina (919) 966.0147 amessina@med.unc.edu</p>
Food and abdominal pain in adolescents and young adults	<p>Many adolescents and young adults who suffer from chronic abdominal pain report food sensitivities; which may result in avoidance of certain foods. A research study at UNC investigates which foods patients avoid and what kind of symptoms these cause. If you participate you will be asked to complete three daily food diaries over the phone as well as a questionnaire on eating and symptoms. No visits to UNC are required.</p> <p>Participation</p> <ul style="list-style-type: none"> • Ages 15-21. • Diagnosed with recurrent abdominal pain or Irritable Bowel Syndrome by a physician . • You can take part in the study whether or not you avoid eating certain foods. • You will receive \$40 for completing the study. 	<p>Principal Investigator Miranda van Tilburg, PhD</p> <p>Research Assistant Megan Squires (919) 843.9755 megan_squires@med.unc.edu</p>
Men & Women with Chronic Constipation	<p>Men and Women with Chronic constipation needed to participate in a study To evaluate the safety of an investigational drug for 14 days.</p> <p>Participation</p> <ul style="list-style-type: none"> • Men and women with a diagnosis of Chronic Constipation • Up to 6 visits to UNC over 1 month • Patients must have had a colonoscopy in previous 5 years or be willing to have one (paid for by study) • Patients will be compensated for their time 	<p>Principal Investigator Douglas A. Drossman, MD</p> <p>Research Coordinator Teresa Hopper (919) 966.8328 teresa_hopper@med.unc.edu</p>

ACG 2009

The American College of Gastroenterology Annual Scientific Meeting and Postgraduate Course
October 23-28, 2009
San Diego Convention Center, San Diego, CA

The Postgraduate Course Directors and ACG's Educational Affairs Committee, along with Friday Course Directors, brought together internationally

recognized experts to deliver the latest clinical update in gastroenterology and hepatology, and discuss what is on the horizon that may impact GI practice.

MONDAY, OCTOBER 26

POSTER PRESENTATIONS

Exhibit Hall

Poster Session II

Symposia Title: **Functional Bowel Disorders**

Poster title: *PROBIOTICS AND POSTPRANDIAL-EATING ASSOCIATED SYMPTOMS*

Amit Ringel, Jennica Jackson, BS, *Olafur Palsson, PsyD*,
Liseanne Fedor-Hammonds, BS, Nancy DeMaria, BS,
Yehuda Ringel, MD, FACC

TUESDAY, OCTOBER 27

POSTER PRESENTATIONS

Exhibit Hall

Poster Session III

Symposia Title: **Functional Bowel Disorders**

Poster title: *FLUCTUATIONS IN STOOL CONSISTENCY IN IRRITABLE BOWEL SYNDROME (IBS)*

Olafur Palsson, PsyD, Marsha Turner, MS, Jeffrey Baggish, MD, William Whitehead, PhD, FACC

ACG POSTERS

PROBIOTICS AND POSTPRANDIAL - EATING ASSOCIATED SYMPTOMS

Amit Ringel, BS (candidate)¹; Jennica Jackson, BS²; *Olafur Palsson, PsyD*²; Liseanne Fedor-Hammonds, BS²; Nancy DeMaria, BS²; Yehuda Ringel, MD, FACC²

1. Hampshire College, Amherst, MA, USA; 2. The University of North Carolina at Chapel Hill, Chapel Hill, NC, USA

Purpose: Recently, there has been growing interest in the use of probiotics to ameliorate various digestive symptoms. The majority of studies in this field have focused on the effect of probiotics on lower gastrointestinal (GI) symptoms. Upper GI and postprandial symptoms are common functional GI complaints, and possess a significant impact on patient well-being and quality of life. However, there is no data on the effect of probiotics on upper GI, and specifically on postprandial GI symptoms.

Aim: To investigate the effect of probiotics on common postprandial symptoms in subjects with functional GI disorders using two probiotic products previously shown to be beneficial in alleviating lower functional GI symptoms.

Methods: Subjects who participated in two separate probiotic clinical trials were evaluated for the effect of the intervention on their postprandial and eating associated symptoms. The intervention included 5x10⁹ cfu total Bifidobacterium animalis lactis Bb12 (BB12) and 1.0g inulin per day for six weeks (Study 1) or Lactobacillus acidophilus (L-NCFM) and Bifidobacterium lactis Bi-07 1x10¹¹ cfu total per day for eight weeks (Study 2). Postprandial symptoms were assessed using a specific questionnaire designed to capture information about the frequency, characteristics, and severity of postprandial symptoms. The severity of each symptom was assessed on a 5-point likert scale. Pre- to mid- and pre- to post-intervention changes in frequency and severity of postprandial symptoms for each probiotic intervention vs. placebo were assessed using a two-sided t test with a significance level of p<0.05.

Results: A total of 117 (probiotic n=30, placebo n=30 in Study 1 and probiotic n=30, placebo n=27 in Study 2) patients were enrolled. Study population consisted of 72% females, 84% whites, and a mean age of 37 years. Baseline demographics were similar between the two groups in both studies. No significant pre to -post changes in the frequency or severity of symptoms were noted in either probiotic intervention compared to placebo, despite significant clinical benefits on lower GI symptoms (overall well being in study 1 and bloating in study 2); and an observed beneficial effect on GI physiology (reduced colonic transit time) in Study 1.

Conclusion: Although negative, these results are important in directing clinicians and patients in regard to expected beneficial effects of these probiotic interventions. Our study results further emphasize that the effect of probiotics is product and symptom specific. Disclosure - Dr. Ringel- Grant/Research Support from Danisco and General Mills, Inc

This research was supported by an industry grant from Danisco and General Mills Inc.



ACG POSTERS

FLUCTUATIONS IN STOOL CONSISTENCY IN IRRITABLE BOWEL SYNDROME

Olafur Palsson, PsyD¹; Marsha Turner, MS¹; Jeffrey Baggish, MD²; William Whitehead, PhD, FACC¹

1. University of North Carolina at Chapel Hill, Chapel Hill, NC, USA; 2. McNeil Consumer Healthcare, Fort Washington, PA, USA

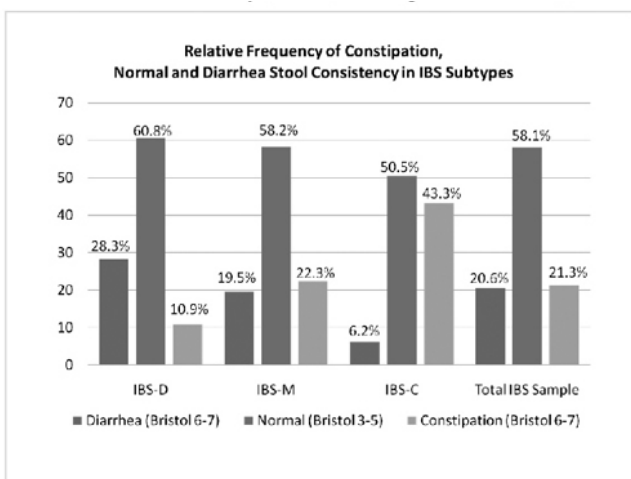
Purpose: Rome III diagnostic criteria divide IBS into 4 subtypes based on self-reported frequency of diarrhea (D) and constipation (C), but it is poorly understood how often patients fluctuate between D and C. We aimed to quantify such fluctuations and evaluate associated characteristics.

Methods: Data were analyzed from 185 IBS patients (Rome III criteria plus physician diagnosis) using no daily IBS medications, who rated the stool consistency of their every bowel movement (BM) on the Bristol Stool Scale in a pocket-sized diary and reported (yes/no) any associated symptoms of urgency, pain/discomfort, or fecal incontinence. Each night, subjects transferred these BM ratings to a secure website, where they rated their global daily bowel symptoms as well. Patients also completed the IBS Severity Scale, IBS-QOL and BSI-18 questionnaires at baseline. Only continuous records of at least 21 diary days were analyzed (mean 72.9 consecutive days, range 21-106). Subject ages were 19-70 years (mean 35.1); 88.6% were females. Rome IBS subtypes were 31.9% IBS-D, 55.1% IBS-M, 12.4% IBS-C, 0.5% IBS-U. Fluctuations between D and C were counted as occurrences of D (Bristol rating 6 or 7) followed later by C (Bristol 1 or 2) or vice versa, and interval length for each fluctuation was calculated in days.

Results: Although the relative incidence of Bristol-defined D and C bowel movements varied substantially between IBS subtypes (28.3% D vs. 10.9% C for IBS-D, 19.5% D vs. 22.3% C for IBS-M, and 6.2% D vs. 43.3% C for IBS-C), fluctuations between the D and C occurred similarly in all subtypes. 79% of the whole IBS sample (146/185) had one or more fluctuations between D and C in their record, and this was comparable in IBS-M, IBS-D and IBS-C (81%, 75%, 78%). Overall, patients averaged 2.91 (S.D.=0.79) fluctuations per 30 days and this frequency was not significantly different between subtypes, although it trended ($p=0.07$) to be lowest in IBS-C (1.79 vs. 2.65 for IBS-D and 3.32 for IBS-M). Frequency of fluctuations was not correlated (Spearman correlations) with age, gender, overall IBS severity, abdominal pain, bloating, life stress or psychological symptoms, but higher frequency of fluctuation was weakly correlated with poorer IBS-QOL scores ($\rho = -0.19$, $p=0.009$).

Conclusion: Most individuals with IBS fluctuate between diarrhea and constipation, typically 2-3 times per month. This occurs independently of IBS subtype, demographics or clinical characteristics. Such fluctuations are therefore normal for the disorder in general and may be one of the defining features of IBS.

This research was supported by an industry grant from McNeil Consumer Healthcare



Frequency of Fluctuations Between Diarrhea and Constipation in IBS Subtypes

IBS Type	Number of fluctuations between C and D per 30 days Mean (S.D.)	Interval in days between C and D bowel movements Mean (S.D.)	% of patients with at least 1 fluctuation between C and D in their diaries
IBS-D	2.65 (3.14)	10.02 (7.38)	75%
IBS-M	3.31 (3.15)	9.41 (10.81)	81%
IBS-C	1.79 (2.12)	12.37 (9.18)	78%
Total IBS Sample	2.91 (3.07)	9.96 (9.68)	79%

NGM 2009

Neurogastroenterology and Motility 2009
Joint International Meeting
August 27-30, 2009; Chicago, Illinois

The topics and speakers for this meeting discussed cutting-edge research results that focus on disease mechanisms, diagnosis, and treatment of disorders involving gastrointestinal neuromuscular function. Particular attention has been placed on the rapidly

developing field of research that focuses on brain-gut interactions. This meeting set the stage to improve our understanding of the physiology and pathophysiology of neuromuscular behavior in the gastrointestinal tract and the brain-gut axis.

THURSDAY, AUGUST 27

Grand Ballroom - Second Floor | Session II | Chairs: Satish Rao and *William Whitehead*

Symposia Title: **Colorectal Disorders** | Session title: Fecal Incontinence

POSTER PRESENTATIONS

Symposia Title: **Colon and Anorectum: Physiology, Pathophysiology, and Clinical Disorders**

Poster title: *RESIDENTS AT CONTINUING CARE RESIDENTIAL CENTERS (CCRC) DO NOT DISCLOSE FECAL INCONTINENCE (FI) TO THEIR PHYSICIANS.*

Steve Heymen, PhD, Olafur Palsson, PsyD, Marsha Turner, MS, Jane Tucker, RN, Mary Palmer, Jan Busby-Whitehead, PhD, and William E. Whitehead, PhD.

Symposia Title: **Functional GI Disorders in Adults: Epidemiology, Genetics and Psychosocial Factors**

Poster title: *FECAL INCONTINENCE AND NURSING HOME REFERRAL: A SURVEY OF GERIATRIC HEALTH CARE PROVIDERS*

Madhu Grover, MD, Jan Busby-Whitehead, PhD, Kirsten A Nyrop, PhD, Mary Palmer, Steve Heymen, PhD, Olafur S Palsson, PsyD, PS Goode, Marsha J Turner, MS, and William E Whitehead, PhD.

NGM POSTERS

RESIDENTS AT CONTINUING CARE RESIDENTIAL CENTERS DO NOT DISCLOSE FECAL INCONTINENCE TO THEIR PHYSICIANS

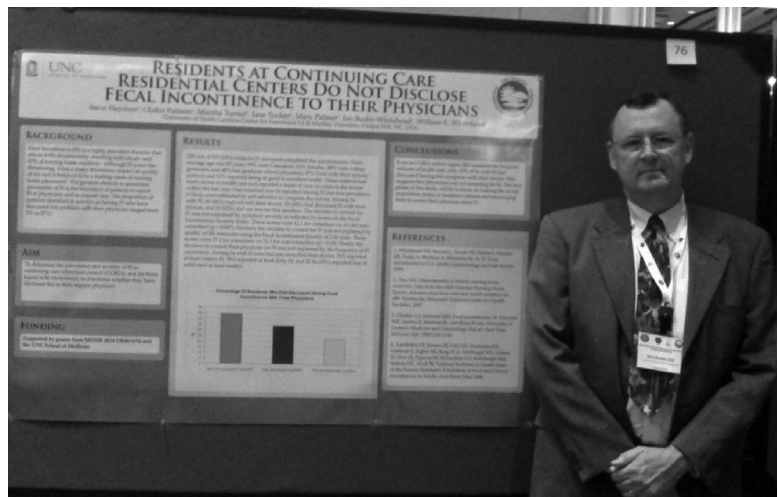
Heymen, Steve; Palsson, Olafur, Turner, Marsha, Tucker, Jane, Palmer, Mary, Busby-Whitehead Jan, Whitehead, William E. UNC Center for Functional GI and Motility Disorders, University of North Carolina at Chapel Hill

Background: Fecal Incontinence (FI) is a highly prevalent disorder that affects 8-9% of community dwelling individuals and 45% of nursing home residents. Although FI is not life-threatening, it has a major deleterious impact on quality of life and is believed to be a leading cause of nursing home placement. The greatest obstacle to secondary prevention of FI is the reluctance of patients to report FI to physicians and to request care. The proportion of patients identified in surveys as having FI who have discussed this problem with their physician ranged from 5% to 27%.

Aim: To determine the prevalence and severity of FI in continuing care retirement centers (CCRCs), and for those found to be incontinent, to determine whether they have disclosed this to their regular physician.

Methods: The first phase of this study was to survey independent living members of two Orange County NC, CCRCs by post. This survey included questions about the frequency and severity of FI (FISI) and the impact of FI on quality of life (FIQOL).

Results: 225 out of 929 (24%) subjects (S) surveyed completed the questionnaire. Their average age was 82 years; 99% were Caucasian, 62% females, 88% were college graduates and 48% had graduate school education; 57% lived with their spouse/partner; and 91% reported being in good to excellent health. These subjects had ready access to health care and reported a mean of over six visits to the doctor within the last year. One hundred four Ss reported having FI, but true prevalence is likely over-estimated by self-selection to complete the survey. Among Ss with FI, 46 (44%) had not



Steve Heymen, PhD stands with poster he presented at NGM 2009

NGM POSTERS

told their doctor, 35 (34%) had discussed FI with their doctors, and 23 (22%) did not answer this question. The decision to consult for FI was not explained by symptom severity as reflected by scores on the Fecal Incontinence Severity Index. These scores were 12.1 for consulters vs. 9.1 for non-consulters ($p = 0.087$). Similarly the decision to consult for FI was not explained by quality of life measures using the Fecal Incontinence Quality of Life scale. These scores were 37.1 for consulters vs. 31.5 for non-consulters ($p = 0.19$). Finally the decision to consult their physician for FI was not explained by the frequency of FI occurrence. Among Ss with FI who had not consulted their doctor, 76% reported at least weekly FI, 39% reported at least daily FI, and 20 Ss (43%) reported loss of solid stool at least weekly.

Conclusion: Even in CCRCs where upper SES residents are frequent utilizers of health care, only 33% of Ss with FI had discussed having this symptom with their doctor. This suggests that physicians are not screening for FI. The next phase of this study will be to focus on making the at risk population aware of treatment options and encouraging them to contact their physician about FI.

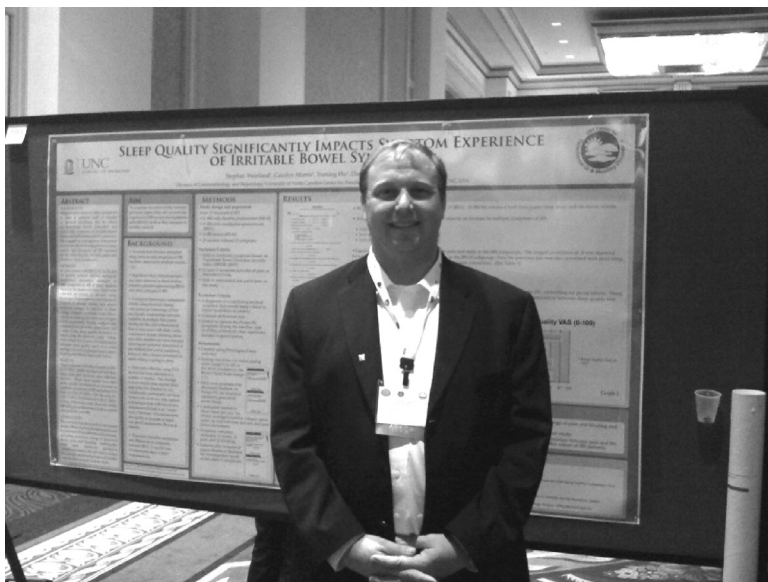
Supported by grants from NIDDK (R24 DK067674) and the UNC School of Medicine

SLEEP QUALITY SIGNIFICANTLY IMPACTS SYMPTOM EXPERIENCE OF IRRITABLE BOWEL SYNDROME

Stephan Weinland*; **Carolyn Morris***; **Yuming Hu***; **Douglas Drossman**. Division of Gastroenterology and Hepatology, UNC Center for Functional GI & Motility Disorders, Chapel Hill, NC, USA.

Background: Sleep has been shown to affect symptoms of pain in patients with a number of medical conditions, but its effects on Functional Bowel Disorders and specifically symptoms of Irritable Bowel Syndrome and its subtypes are not known. We engaged in a prospective assessment to examine the relationship between sleep quality and symptoms of IBS reported on the following day via both paper and electronic diary assessment.

Methods: 46 participants with IBS D, C, or M and 14 healthy controls utilized ecological momentary assessment strategies to rate symptoms of IBS at three random times for 14 consecutive days. Data were collected on pocket pc devices using Pendragon Forms software and Microsoft Outlook to prompt alarms and record symptom ratings. In addition to these ratings, subjects completed event driven ratings at wake up, bed time and pre/post bowel movement. Finally, subjects also completed an end of day paper diary and a start of day sleep quality inventory. T-tests were conducted to look at the relationship between sleep quality rated on a visual analog scale and symptoms of pain, stress, bloating and Bristol stool scale values.



Stephan Weinland, PhD stands with his poster at NGM 2009

Results: 60 participants (14 Healthy Controls, 16 IBS-D, 18 IBS-C, 12 IBS-M) returned both their sleep diary and electronic data collection devices. When sleep quality was rated more poorly we observed an increase in multiple symptoms of IBS including VAS Pain ($t = -2.98$, $P < .003$), VAS Stress ($t = -4.14$, $P < .0001$), and VAS Bloating ($t = -2.57$, $P < .01$). Group differences were observed among IBS subtypes and between healthy controls and patients with IBS.

Conclusion: We conclude that sleep quality may impact many of the symptoms that are experienced by patients with Irritable Bowel Syndrome, including symptom ratings of perceived stress, pain and bloating. Additionally, there were significant qualitative differences noted in the self-report of sleep between the treatment groups and healthy controls that warrant further study.

Supported by the NIH Biopsychosocial Research Center Grant R24DK067674 (Whitehead/Drossman) and by Takeda Pharmaceuticals.

WELCOME TO THE CENTER



Sarah Barrett is an administrative assistant to Ceciel Rooker, Director of Public Relations, Development and Clinical Services. Sarah has a bachelor's degree from Indiana University and spent the last five years working as a recreational therapist at a rehabilitation center. She recently moved from Indianapolis, Indiana with her husband, Pat, and dog, Buddy.



Emilee Colella is a second year medical student at UNC working with Miranda van Tilburg, PhD and Sandra Kim, MD as the principle investigator of a pilot study looking at the effect of home based guided imagery treatment in pediatric patients with functional abdominal pain in quiescent inflammatory bowel diseases. The study is a continuation of her summer research, funded through the Carolina Medical Student Research Program, and she has been involved in all recruitment, data collection and administrative duties of the study. She graduated Phi Beta Kappa from UNC Chapel Hill in 2008 with a BS in Biology, with highest distinction, and a minor in Chemistry.



Mary Scholz is the full time biofeedback provider and RN in the Motility department of UNC. She came to UNC from Seattle, Washington, in September of 2009. Prior to working at UNC, she was the Director and owner of Mind Body Health PLLC, which provided biofeedback, counseling and hypnosis training to client with chronic pain, headache, and stress related disorders management. Mary holds an undergraduate degree in Nursing, a master's degree in Behavioral Medicine and a PhD in Psychophysiology. She has taught courses on psychophysiology, pain, headache and stress related disorders in undergraduate and graduate courses. For several years she wrote a column for RN Magazine called Pain Clinic. She is on the Board of Directors for the Behavioral Research and Training Foundation, which offer courses on biofeedback and psychophysiology.



Megan Squires is a research assistant for Dr. van Tilburg. She currently recruits participants for and coordinates studies focusing on parental attitudes toward fecal incontinence in children, validating the Rome III criteria for children, and examining the effects of eating habits in adolescents with Functional Abdominal Pain. She is a 2009 graduate of Appalachian State University with a bachelor's degree in psychology. Ms. Squires plans to attend gradate school in the future and enjoys practicing yoga and ballet in her spare time.

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Memorial Research Fund

The Alan Wayne Ducoff Memorial Fund provides an opportunity for families and friends to remember and honor their loved ones by making a designated contribution to the Center's research program. To make a donation to the Alan Wayne Ducoff Memorial Fund, please check off the appropriate box on the donation form.



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UPCOMING EVENTS

UNC FGIMD RESEARCH DAY 2010

University of North Carolina
at Chapel Hill, NC 27599
Bioinformatics Building Auditorium

November 5-6

Keynote speakers:

Kurt Kroenke, MD, MACP,
Indiana University

Albena Halpert, MD
Boston University Medical Center

Robin Spiller, MD, MSC
Queen's Medical Centre, Nottingham, UK

William Maixner, PhD, DDS
University of North Carolina

Arnold Wald, MD
University of Wisconsin

24 talks planned

UNC FGIMD PATIENT SYMPOSIUM 2010

Siena Hotel, Chapel Hill, NC

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- Understanding Functional GI Disorders
- Working Together With Your Doctor
- Managing Your Functional GI Disorder

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Albena Halpert, MD
Boston University Medical Center.