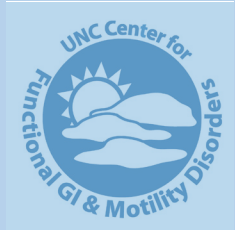
Winter 2014

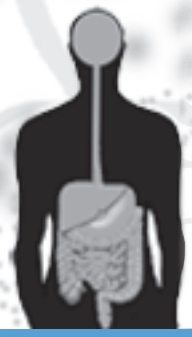
A publication of the University of North Carolina Center for Functional GI & Motility Disorders

Digest



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

IN THIS ISSUE:



Current Understanding on the Pathophysiology of Functional GI Disorders

In the past several years, there has been a shift in the direction of research into how functional GI disorders (FGIDs) develop. Previous research focused on genetics, fMRI imaging, and psychological impacts and stress to study the origination of GI symptoms while newer research has shifted toward diet, microbiota, inflammation, and intestinal permeability.

A meta-analysis conducted by Bashashati. Et. al. [1] found that patients with IBS generally had increased levels of the cytokine TNF-alpha and lower levels of cytokine IL-10. A cytokine is a messenger protein secreted by cells in the immune system when the body perceives a problem or threat. [3] The released cytokine binds with specific receptors on a cell and changes the cells behavior to respond to or regulate the body's response to infection or disease. TNF-alpha is a pro-inflammatory cytokine and thus triggers an inflammation response in the body. The TNF-alpha protein starts an immune response in the presence of bacteria, fungal, and viral pathogens. It also increases the flow of small molecules and cells in and out of blood vessels (vascular permeability) and regulates inflammation in the body.[10] However, chronic prolonged exposure to TNF-alpha causes it to lose some of its defense capabilities and can lead to prolonged inflammation. [2,10] Diseases currently known to be effected by chronic prolonged exposure to TNF-alpha include rheumatoid arthritis, Crohn's disease, multiple sclerosis, diabetes, trauma, malaria, and bacterial septic shock.[10] IL-10 is a cytokine that has an anti-inflammation role. IL-10 influences antibody production and is essential in the regulation of the immune system of the gastrointestinal tract.[4] Anti-inflammatory cytokines, such as IL-10, inhibit the production of pro-inflammatory cytokines, like TNF-alpha. [13] Excessive production of anti-inflammatory cytokines inhibits the body's immune system and ability to respond to an infection. [13]. A cells ability to produce large or small amounts of a cytokine is genetically coded. Research has indicated that IBS patients have increased prevalence of genes that cause the body to reduce production of IL-10 cytokines. [12] With less anti-inflammatory cytokines to regulate and inhibit the effects of pro-inflammatory cytokines, this may be one reason for increased inflammation in the body and GI tract.

The intestines allow water and nutrients to pass through the gut wall into the blood stream while keeping out harmful substances such as bacteria, bile salts, and byproducts. This action is known as intestinal permeability. This is done with the help of the epithelial barrier. The epithelial barrier works similarly to how our skin protects our body. Problems with the epithelial barrier are thought to be triggered by cells in the immune system releasing cytokines that disrupt the

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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 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

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Printed on 30% post-consumer recycled paper

Feast And Flatulence: How food choices may help your GI symptoms

All humor aside with the title, patients with functional GI disorders understand the relationship between food and GI symptoms. The holidays remind us that we should always be considerate of what we eat, regardless of holiday parties, guest expectations of eating what they serve, and portion sizes of meals. It's easy not to pay attention to foods that contain GI trigger ingredients (high fat or rich foods and high FODMAP foods), or consume larger than intended portions when you're cheering for your team at the Super Bowl or having a party with family and friends. Patients with functional GI disorders need to be careful of what types of food they eat and to be wary of the quantity of food they eat. It's important to note that every person tolerates foods differently and you know your body best. If you are concerned about what are the best types of food to eat for your GI condition, consult with your physician or a registered dietician / nutritionist who can best guide you to healthy eating habits that work best for you.

Fats: What type and how much?

The Centers for Disease Control (CDC) recommends that people should consume appropriate amounts of unsaturated fat, between 20%-35% of calories from fat, as part of a balanced diet. [2] Unsaturated fats include monounsaturated fats and Omega-6/Omega-3 polyunsaturated fats.

Types of Unsaturated Fats [2]		
Monounsaturated Fats	Omega-6 Polyunsaturated Fats	Omega-3 Polyunsaturated Fats
Nuts, vegetable oils, olive oil, sunflower oil	Soybean oil, corn oil, safflower oil	Soybean oil, walnuts, flaxseed, fish (trout, herring, salmon)

Saturated fats are recommended to be consumed as less than 10% of daily fat calorie consumption. [2] Examples of saturated fat are animal fats (high fat dairy products and high fat animal meats) and palm and coconut oils.

Consuming healthy portions of fat is part of a balanced diet and should not have a significant impact on symptoms. However, eating a meal that has a significantly higher fat content can cause an increase in colonic contractions which can initiate symptoms of diarrhea, pain, rectal urgency and rectal distension. [3,4] Eating greater portions of high fat foods also delays gastric emptying while increasing bloating and abdominal pain. [4,5] Choosing foods that are lower in fat can reduce symptoms associated with functional GI disorders as well as forming part of eating a healthier diet.

What is FODMAP?

FODMAP is an acronym for **F**ermentable **O**ligosaccharides, **D**isaccharides, **M**onosaccharides **A**nd **P**olyols. Kate Scarlata, a registered dietician and published author on FODMAP foods, defines FODMAPs as;

"…small commonly malabsorbed carbohydrates that can pull water into the intestine and are rapidly fermented by gut bacteria contributing to gas. When water and gas expand the intestine, this can contribute to pain. FODMAPs are found in everyday foods from apples, pears, garlic, onion, wheat, even in honey! The effects of FODMAPs are cumulative; you might be able to tolerate some but if you eat too many at the same time your belly may pay the price."

Kate recommended on her blog several recipes for the holiday cooking, including low FODMAP entrees, side dishes, and desserts.[6] In addition to Kate Scarlata, Crystal Zaborowski Saltreli, CHC, who specializes in gastroparesis, also recommended recipes specifically for gastroparesis patients.[5]

It is important to focus on what you can eat (and enjoy eating) instead of worrying about what you have to exclude from your diet. The FODMAP diet is not meant to be an exclusionary diet for long periods of time but rather as a form of food trial and error.[3] After eating a low FODMAP diet for a trial period, try adding one food back one at a time to see if any GI symptoms return. The purpose of adding one food at a time is to see if any of the foods trigger symptoms. [1,5] As stated above, everyone tolerates foods differently and you should always consult a physician and/or a registered dietician to ensure you are consuming a balanced diet.

Where can I find a registered dietician / nutritionist?

Working with a nutritionist/registered dietician is important to learn how to best manage your diet, set realistic goals, and to guide you with pointers and continued support. Susannah Southern, RDN, LDN works in the UNC Outpatient Nutrition Clinic in Family Medicine and Gastroenterology. She emphasizes how important diet is in helping to control GI symptoms.

**Spelt grain is an ancient sub-species of wheat from Europe that has a higher protein content, is easily digestible, but it also has gluten levels that affect celiac patients and those allergic to gluten and wheat products. [7]

Patients should create a list of meals for the week and create a shopping list prior to going to the grocery store. While at the grocery store, read the ingredients list on the nutrition label. You may find hidden high FODMAP foods where you didn't expect them.

It is also important when seeking nutritional counseling that you contact your insurance carrier before scheduling the appointment. Insurance typically covers nutritional counseling for medically necessary diseases (cardiovascular disease, diabetes, hypertension, kidney disease, eating disorders, gastrointestinal disorders, and seizures.) but your insurer may not cover a specific functional GI disorder.

For information on how to set up an appointment with Susannah Southern, RDN, LDN, fax referrals to 919-966-6126, call for an appointment at 919-966-0210, or for further information, email at Susannah.southern@unchhealth.unc.edu.

You can also use http://www.eatright.org/programs/rdnfinder/ to locate a registered dietician near you. Here are a few general rules that may help to reduce GI symptoms.

1. Choose foods that are lower in fat and avoid foods you know will trigger symptoms. If you are at a party and do not have many options, limit your consumption of high fat and high FODMAP foods.

2. Do not over eat. Around the holidays, you may find yourself invited to multiple events. If you know that you'll be attending multiple parties, limit the amount of food you consume at each party. A normal sized meal consumed multiple times in a short period of time can lead to an overload of the system.

3. It is O.K. to refuse the offer of food if you know it will make you symptomatic. Your health is more important!

Below is a comprehensive list compiled by Stanford University of low and high FODMAP foods to help you become more aware of the different options available for substitution.

FODMAP Food Examples from Stanford University Medical Center [1]		
Food Type	***High FODMAP***	***LOW FODMAP Alternatives***
Meat Protein	Meats processed with high fructose corn syrup	Beef, chicken, turkey fish, pork, eggs, shellfish
Dairy Products	High lactose dairy, buttermilk, chocolate, creamy cheesy sauces, ice cream, cow, goat, and sheep's milk, sour cream	Lactose free dairy, cream cheese, hard cheese (cheddar, colby, parmesan), soft cheese (brie, feta, mozzarella), sherbet, Greek yogurt (small amounts)
Meat and Non-Dairy Alternatives	Cashews, beans, black eyed peas, lentils, pistachios, soy beans	Coconut and rice milk, nuts (walnut, macadamia, peanut, pecan, and pine), nut butters, tofu (firm)
Fruits	Apples, applesauce, apricots, blackberries, boysenberries, canned fruit, dates, dried fruits, figs, guava, mango, nectarines, peaches, pears, plums, persimmon, prunes, watermelon	Bananas, blueberries, cantaloupe, cranberries, grapes, honeydew, kiwi, lemon, lime, mandarin, orange, passion fruit, pineapple, raspberries, rhubarb, strawberries, tangerine, papaya
Grains	Any food made with wheat/barley/rye when it is a major ingredient, gluten free/spelt grains [7] made with foods to a limit (not over consuming), chicory root, inulin	Gluten Free/Spelt grains** (corn, oats, potato, quinoa, rice, tapioca) included in: bagels, biscuits, breads, cereals, chips, crackers, noodles, pancakes, pastas, pretzels, tortillas, oatmeal, popcorn
Vegetables	Artichokes, cauliflower, mushrooms, sugar snap peas, pumpkin, squash	Alfalfa beans and sprouts, bamboo shoots, bell peppers, bok choy, carrots, common cabbage, cucumbers, eggplant, green beans, kale, lettuce, parsnips, potatoes, radishes, rutabaga, spinach, tomatoes, turnips, zucchini
Desserts	Any food made with high fructose corn syrup and all foods to a limit (not over consuming)	Any food made with low FODMAP foods
Beverages	Any food made with high fructose corn syrup and all foods to a limit (not over consuming), fortified wines (sherry, port)	Fruit and vegetable juices and smoothies made with low FODMAP foods
Seasonings, Condiments	Jam, jelly, pickles, relish, salsa, salad dressings made with high fructose corn syrup, Chutney, agave, garlic, garlic salt/powder, honey, hummus, molasses, onions (brown, leeks, shallots, Spanish, white, spring onion (white bulb), onion salt/powder, tomato paste, pesto with garlic, artificial sweeteners (isomalt, mannitol, sorbitol, xylitol)	Jam, jelly, pickles, relish, salsa, salad dressings made with low FODMAP ingredients, butter, chives, cooking oils, garlic/onion infused oils, maple syrup without high fructose corn syrup, mustard, margarine, mayonnaise, spring onion (green stalks), olives, pepper, salt, seeds (chia, flax, pumpkin, sesame, sunflower), sugar, soy sauce, vinegar

Slow Cooker Turkey Breast [5]

Ingredients

- 1 bone in turkey breast (6-7 lbs) with the skin removed.
- 1 Tbsp olive oil
- 1 tsp salt
- ½ tsp paprika
- ½ tsp thyme
- ½ tsp oregano

Directions:

1. Brush turkey with olive oil.
2. Combine the remaining ingredients in a small bowl and rub over turkey.
3. Transfer turkey to a 6-quart slow cooker.
4. Cover and cook on low for 6 hours or until internal temperature reaches 165 degrees Fahrenheit.

Maple Peanut Sesame Chicken [6]

Ingredients

- 1 lb chicken tenders (boneless, skinless)
- 2 Tablespoons all natural peanut butter
- 1 Tablespoon sesame oil
- 3 Tablespoons reduced sodium tamari (soy sauce)
- 1 Tablespoon sesame seeds
- 1 teaspoon ground ginger
- 1-1/2 Tablespoons pure maple syrup

Directions:

1. Wash and pat dry chicken.
2. In medium casserole dish, add peanut butter, sesame oil, soy sauce, sesame seeds, ginger and maple syrup whisking to blend.
3. Add chicken and toss to coat with mixture.
4. Cover and refrigerate for 30 minutes-several hours.
5. Keep chicken in 'marinade' and place casserole uncovered in oven.
6. Bake at 350 degrees Fahrenheit for 30 minutes or until chicken is cooked through. Serve over rice vermicelli noodles or baby salad greens.

Chocolate Peanut Butter Bits [6]

Ingredients

- 1/4 cup semisweet chocolate chips
- 1/4 cup oat bran
- 1/3 cup natural peanut butter
- 1/2 cup rolled oats
- 1 teaspoon vanilla paste or extract
- 1/4 cup walnuts
- 1/4 cup unsweetened shredded coconut
- 1 tablespoon maple syrup

Directions:

1. Toss all of the ingredients in a food processor with a steel blade.
2. Pulse mixture until blended (1-2 minutes)
3. Drizzle additional maple syrup if it is still too dry and roll into a ball.
4. Makes about 12-14 balls. Eat immediately or freeze and eat them cold.

Slow Cooker Rice Pudding [5]

Ingredients:

- 3/4 cup short grain rice
- 1-1/2 cups coconut milk
- 2 cups water
- 3/4 cup maple syrup
- 1-1/2 tsp vanilla
- 1 tsp ground cinnamon

Directions:

1. Combine all ingredients in a slow cooker and stir well.
2. Cover and cook on "Low" for 4 – 5 hours or on "High" for 2 to 2-1/2 hours.
3. Stir 2 – 3 times during cooking process.
4. Serve warm.

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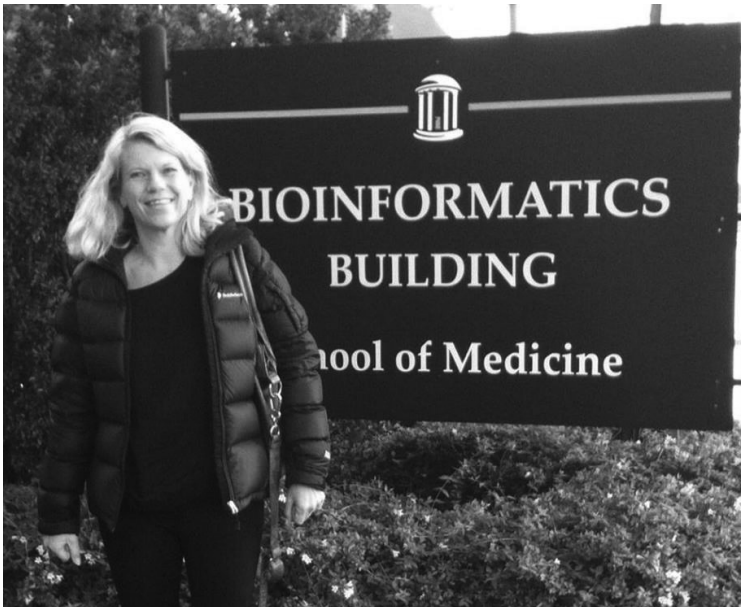
Article written by Stefanie Twist, BA

Special thanks to
Kate Scarlata
Crystal Zaborowski Saltreli and
Susannah Southern
for their input and expertise.

International Visiting Faculty Train with UNC Faculty

Pernilla Jerlstad, RN visited the UNC Chapel Hill campus this November to train with Drs. Steve Heymen, William Whitehead, and Mary Scholz on biofeedback therapy for patients with pelvic floor disorders. Pernilla is from the University of Gothenberg in Sweden and works with Rome Board Member, Dr. Magnus Simren. Pernilla spent most of her time training with Dr. Scholz at the new Hillsborough Medical Campus observing biofeedback operating procedures and patient interactions as well as visiting the GI Procedures clinic to observe diagnostic evaluations using anorectal manometry.

Pernilla collaborated with UNC faculty to learn more about treatment options for pelvic floor disorders so that she can use this information to train other health care professionals and to provide additional services to patients in Sweden.



Center Annual Report: 2014

Synopsis of 2014

The research and publications of the laboratory for 2014 reflect the diversity of interests among our investigators. The major topics are these: (1) Accidental bowel leakage (ABL). We received an R21 from NIDDK to develop a self-help website for patients with ABL. During the last year we also had support from Salix to carry out surveys on barriers to consulting for treatment of ABL. (2) Behavioral treatment of functional abdominal pain in children. Drs. Miranda van Tilburg and Rona Levy are testing a unique cognitive behavior therapy intervention based on the principles of social learning. Innovative aspects of this study are delivering the intervention to parents rather than the child patients and comparing telephone-based to office-based treatment. (3) Mechanisms for the symptoms of IBS. We published two pivotal papers from a large diary study of IBS showing that symptoms wax and wane in distinct episodes. We have submitted an application to fund a follow-up study to test hypotheses about the mechanisms for pain in constipation and diarrhea that were generated by this study. (4) Genomic and mitochondrial analysis to identify potential SNPs of genes associated with IBS.

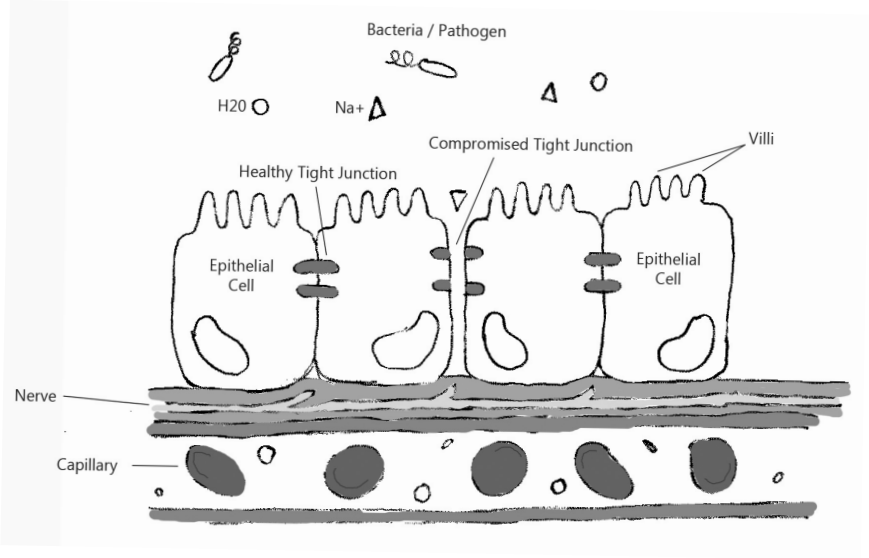
Major Accomplishments in 2014

- 19 publications in peer reviewed journals
- 13 active grants within the Center.
- Dr. Miranda van Tilburg was awarded a grant from Takeda Pharmaceuticals to study IBS biomarkers.
- Dr. Magnus Simren will be on a year long sabbatical at UNC-CH from Sweden on a grant from Ferring Pharmaceuticals. Dr. Simren will collaborate on research studying the etiology of abdominal pain in IBS.
- Dr. Miranda van Tilburg compiled NASPGHAN referral list of providers delivering psychosocial and behavioral therapy for children with GI disorders.
- A successful Patient Education Day program was held in Washington, DC. This attracted a large internet audience. The Center's External Advisory Board was not convened in 2014.

Goals for 2015

- The Center has plans to contribute a chapter to the Rome Foundation's Development and Validation of Rome IV Diagnostic Questionnaire.
- Submit the the NIDDK for a comparative effectiveness trial comparing the effectiveness of fecal incontinence treatments.
- Publish a paper on the what determines who will or will not consult their physician about fecal incontinence and develop a new severity scale for fecal incontinence.

Pathophysiology of Functional GI Disorders: Current Understanding

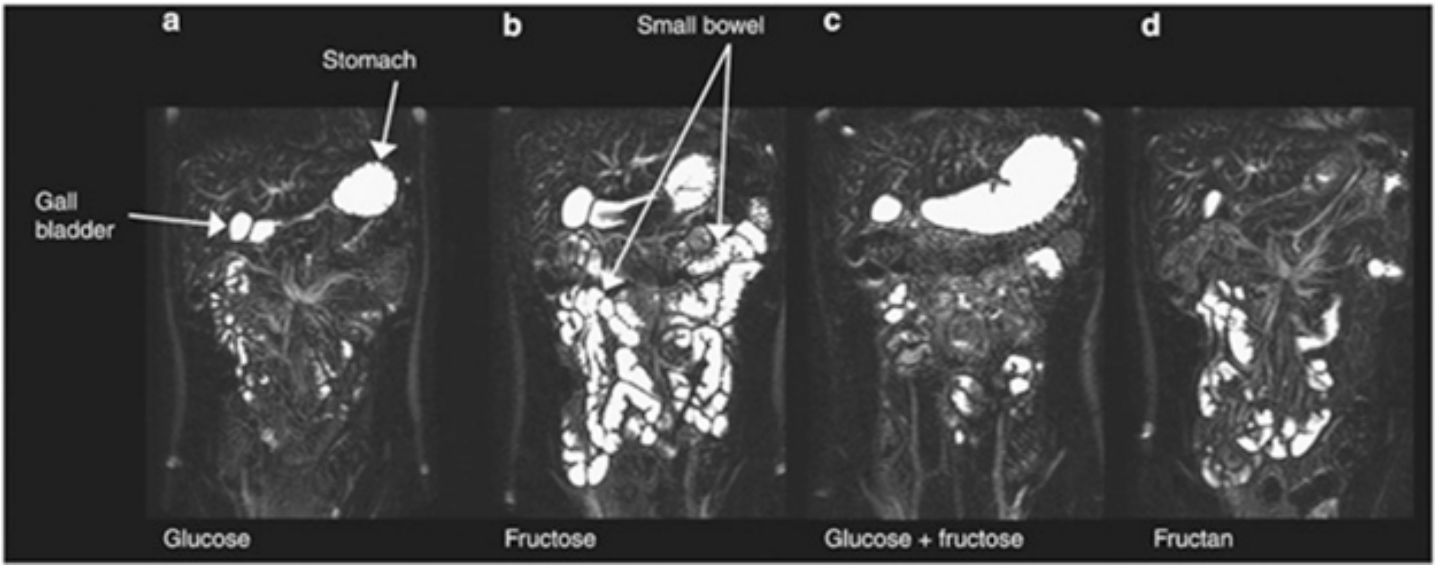


Disruption of the tight junction in epithelial cells in the intestine

barrier between cells that allows the movement of bacteria from the gut into the body. [8] The barrier between cells is called the tight junction. When the cytokines disrupt the tight junction, this decreases its ability to hold back bacteria and bile salts. This is thought to stimulate sensory nerves in the intestine and can cause the sensation of pain or discomfort. New data suggests that a compromised epithelial barrier can lead to low-grade inflammation, intestinal dysfunction, and is thought to impact the severity of abdominal pain. [7]

Consumption of different types of foods also has an impact on how our GI tract reacts. Foods that contain FODMAPs (fermentable oligosaccharides, disaccharides, monosaccharides and polyols) affect the intestine in several ways. Malabsorbed carbohydrates from FODMAP foods draw water into the small bowel and provide a food source for bacteria in the gut. The increased volume of liquid and excess gas as a byproduct of the bacteria can cause pressure, discomfort, and pain in the abdomen. The MRI image shows the small bowel water volume after consuming specific types of FODMAPs. The graph show changes in small bowel water content (SBWC) and changes in colonic gas volume after consuming specific FODMAPs.[9] As we are beginning to understand how certain foods affect our GI tract, it may be possible to individualize diet advice to patients based on their symptoms and diagnosis as an additional resource for symptom management.

A longitudinal study published in 2014 followed 250 children and 127 adults with confirmed salmonella exposure for 16 years to examine if GI pathogens increase the risk of developing post-infectious IBS (PI-IBS). The study showed that exposure to an infectious pathogen did increase the likelihood of developing Irritable Bowel



Murray, Spiller, et al. Am J Gastroenterol 2014;109:110-9.
This image shows small bowel water volume after eating specific types of foods.

Syndrome (IBS) and that children were more at risk than adults to develop IBS. [5] Stress also plays an important role in the risk of developing a functional GI disorder. Stress increased bacterial load in the GI tract, but the diversity of the bacteria decreased at the same time. [6]

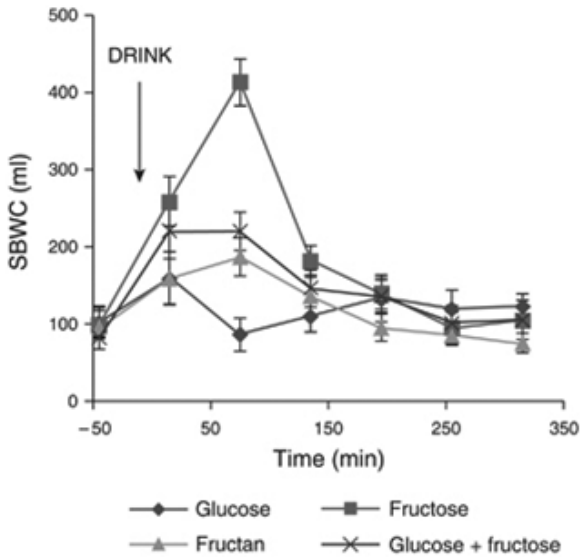
Dr. Whitehead and Dr. Palsson recently discovered that bowel symptoms in IBS patients occur in distinct patterns of multi-day episodes rather than sporadically. [11] This occurred for 75% of the symptoms reported by patients. As a result, this new information could be used to redefine how clinicians respond to symptom management.

There are unsolved questions about the causes of FGIDs. As we learn more about FGIDs, further refinement of the diagnostic criteria need to reflect current knowledge of each disorder. The Rome Foundation is currently working with over 100 international experts who are updating the diagnostic criteria and management guidelines for FGIDs, which will be called ROME IV.

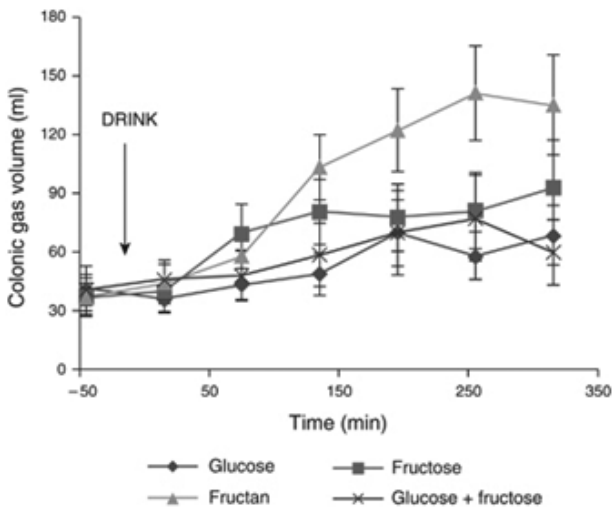
Continued research will certainly lead to more information about the mechanisms of IBS and different FGIDs. As the science evolves, it has become clearer that there is no one cause, but multiple factors that are involved in the development of a FGID.

Article written by Stefanie Twist, BA

Small Bowel Water Volume (SBWV)



Colon Gas Volume



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Faculty Profile

Spencer Dorn, MD, MPH, MHA
Assistant Professor of Medicine
Vice Chief of Gastroenterology

Spencer Dorn, MD, MPH, MHA

Spencer Dorn, MD, MPH, MHA is Vice Chief of Gastroenterology and Assistant Professor of Medicine. He currently works with patients suffering from functional GI and motility disorders in the gastroenterology clinic, motility lab, and GI procedures units. He is an investigator on multiple IBS and chronic constipation drug studies, and also has designed interventions to improve care for IBS.

Both patients and physicians are often frustrated by the increasingly expensive and often unfriendly health care system. Dr. Dorn works locally to improve quality of care, efficiency, and patient and provider experiences. Some examples include: leading the GI build of UNC's new EPIC electronic health record; developing new methods for processing referrals and scheduling patients for clinic appointments and GI procedures; revamping all patient materials, including the UNC Gastroenterology website; and developing programs to improve patient experiences in both the clinic and procedures. Dr. Dorn is especially proud that 96% of patients treated in the GI clinic and 97% in GI procedures would recommend UNC GI to a friend or family member.

Dr. Dorn received his medical degree at State University of New York at Brooklyn before training in internal medicine at Harvard's Brigham and Women's Hospital and then in clinical research and gastroenterology at UNC. During his fellowship he focused on functional GI disorders under Dr. Doug Drossman and Dr. Bill Whitehead and completed an ANMS fellowship in lower GI motility with Dr. Satish Rao. He has since completed a Masters in Public Health in Epidemiology and a Masters in Health Care Administration in Health Policy & Management, both from the UNC School of Public Health.

Expert updates on functional GI disorders: A Monthly Video Series for Patients

The Center will be presenting a series of online monthly videos. Each half hour video aims to provide individuals with Functional GI disorders (FGIDs) new insights from top experts in the field, on helpful topics for understanding these disorders. The videos in this series will be a mix of formal presentations and more informal interviews, but we aim for each one to be packed with authoritative and interesting information.

The Center also encourages patient participation as after each video is posted on this page, patients will have 7 days to ask the experts questions about the topic. We will post the questions along with the experts' answers underneath the video in a "Question and Answer" section soon after the 7 day question period ends, to enhance the educational value of each video.

For more information, please visit the website, www.fgidpatientupdate.com. If you have questions or comments about this video series, you can also contact Dr. Olafur Palsson via email at opalsson@med.unc.edu.

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

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Treatment Studies

Research Subjects Needed

Need Men and Women who have Chronic Constipation

Do you have chronic constipation?

The UNC Center for Functional GI and Motility Disorders is conducting a research study to evaluate an investigational drug.

Eligibility: To be eligible, you must be between the ages of 18-81, and have chronic idiopathic constipation.

Participation includes:
- Completing daily symptom diaries on a handheld electronic device
- Documenting bowel movements on a handheld electronic device
- Giving blood samples and urine samples
- Completing a no-cost physical exam
- Completing 6 -7 visits during the 14-week study
- Self-administering study medication once a day

Qualified participants may receive compensation from the site for participation and travel expenses. Potential subjects should not be participating in any other clinical trials.

Principal Investigator:
Spencer Dorn, MD

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United European Gastroenterology Week (UEGW): 2014

On October 18 - 22, 2014, Drs. William Whitehead, Steve Heymen, and Olafur Palsson travelled to Vienna, Austria for their first trip to United European Gastroenterology Week (UEGW).

United European Gastroenterology Week is an international meeting of gastroenterologists held in Europe. It is a similar conference to Digestive Disease Week (DDW) in the United States. There were 12,800+ attendees, 3,500+ abstracts submitted from countries all over the world, and 466 invited lectures.

Drs. Whitehead and Palsson were among these selected to give invited lectures.

The top 10 attending counties were;

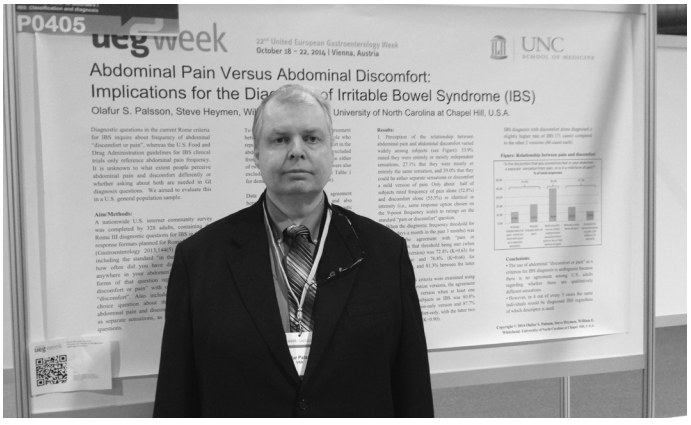
1. Italy
2. United Kingdom
3. Russia
4. Japan
5. Germany
6. France
7. Spain
8. Brazil
9. United States
10. Austria

Dr. Olafur Palsson was live Tweeting during the conference and received the "Most Influential Tweet of UEGW 2014" award out of hundreds that were posted to Twitter for the conference. Information on UEGW can be found at http://live.ueg.eu/week/news/.
To follow Dr. Palsson on Twitter, you can find him at @DrPalssonUNC or you can follow the Center Twitter feed at @FGIFYI

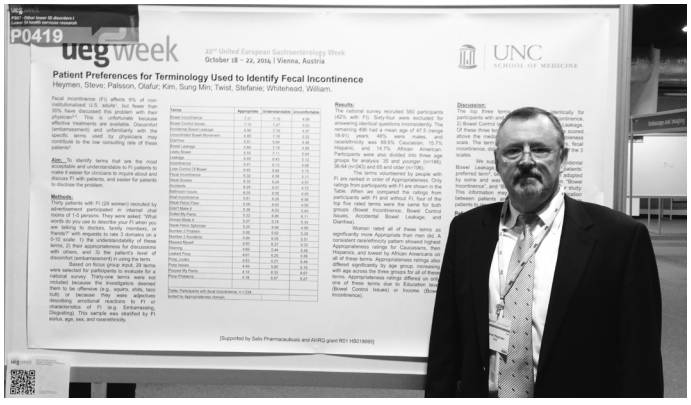
This was the first time the Center has participated in UEGW. The Center was well represented by five posters and three invited oral presentations.

The Center would like to congratulate all our faculty who represented the University of North Carolina Chapel Hill at UEGW. The faculty are already planning for Digestive Disease Week 2015 in Washington D.C.

Dr. William Whitehead gave many oral presentations, one of which was "Which Measure of Fecal Incontinence Severity Is the Best Predictor of Fecal Incontinence Quality of Life (FIQL)?"



Dr. Olafur Palsson presented "Abdominal Pain Versus Abdominal Discomfort: Implications for the Diagnosis of Irritable Bowel Syndrome (IBS)."



Dr. Steve Heymen presented "Patient Preferences for Terminology Used to Identify Fecal Incontinence."

Balloon evacuation test for the diagnosis of rectal evacuation disorders

- William Whitehead

An important new study of the balloon evacuation test for diagnosis of rectal evacuation disorders was published by Dr. Giuseppe Chiarioni of the University of Verona and collaborators from the Center. Their findings are reported in Clinical Gastroenterology and Hepatology, volume 12, pages 2049-54. [1]

This study confirmed that the balloon evacuation test is a reliable and sensitive test of the ability to relax anal muscles and evacuate a simulated bowel movement (water filled balloon). This report is ground-breaking for two reasons; (1) It revises the standards for interpreting the test and (2) it describes a method for performing the test that can be done by any physician and not just academic gastroenterologists.

It is known that there are two different physiological causes for the symptoms of constipation. One of these is a deficiency of the rings of contractions in the colon that are responsibly for pushing stools towards the rectum. This results in slow transit and leads to a decreased frequency of bowel movements and the passage of hard stools. The other physiological cause of constipation is a failure to relax the sphincter muscles when trying to have a bowel movement, which makes it difficult to empty the rectum. People with this type of constipation have to strain very hard to force any stool out. This type of constipation is called disordered defecation.

Before being tested to identify the cause of their constipation, patients are first tried on a conservative treatment regimen that may include, (1) increased fiber in their diet and increased water, (2) increased exercise and (3) laxatives, enemas, or suppositories. Approximately 55% of patients with chronic constipation improve significantly with just these measures. However, for those who do not, testing to identify the type of constipation they have is important because it enables doctors to recommend the most effective treatments. Patients with disordered defecation are more likely to respond to biofeedback training than to laxatives, but patients with slow transit constipation may not benefit from biofeedback unless they also have disordered defecation.

Biofeedback is a technique for teaching patients how to relax their anal muscles to allow stool to be expelled from their rectum. For more information on this type of biofeedback, see the "Guidelines for management of benign anorectal disorders" which were recently published by the American College of Gastroenterology. [2] Dr. Whitehead, Director of the Center, along with other authors, updated these guidelines.

To diagnose disordered defecation, doctors usually begin by inserting a soft plastic tube with a balloon attached to it into the rectum. They fill the balloon with 50 mL of water and have the patient measure with a stopwatch how long it takes them to evacuate the balloon while they are alone in a bathroom and are sitting on a toilet seat. This simple test has been used for some time but the method of doing the test has varied. For example, the size of the balloon, the amount of water in the balloon, and the time allowed for trying to pass the balloon have not been consistent, and this has resulted in some variability in the accuracy of the test. Dr. Chiarioni's team showed that a Foley catheter, which is commercially available and stocked by most hospitals, works very well and is available throughout the world because this is a catheter that is routinely used to manage urinary incontinence in very ill patients.

Dr. Chiarioni also showed that the upper limit of normal for the test should be revised upwards from one minute to two minutes because (1) about 7.5% of non-constipated people require more than one minute but less than 2 minutes to pass the balloon, but no healthy controls required more than 2 minutes. Moreover, (2) only 3 out of 148 patients who were able to evacuate the balloon from their rectum when given up to 5 minutes to try required more than 2 minutes; this shows that the 2 minute rule detects all but 2% of the people who are unable to pass the balloon. When the 2 minute rule is used to classify patients as normal or abnormal, the test results are 100% reproducible 30 days later and the results agree very well with anal manometry, which is another test commonly used to diagnose disordered defecation.

This study by Dr. Chiarioni shows how the balloon evacuation test can be performed and interpreted by physicians in private practice. Using this technique, it is no longer necessary to refer patients to specialists at academic medical centers, which may be far from where they live. However, in patients who have an abnormal balloon evacuation test, doctors may still want to refer to an academic medical center for anal manometry to confirm the diagnosis and provide biofeedback.

1. Chiarioni G, Kim SM, Vantini I, Whitehead WE. Validation of the balloon evacuation test: reproducibility and agreement with findings from anorectal manometry and electromyography. Clin Gastroenterol Hepatol. 2014: 12(12); 2049-54.
2. Wald A, Bharucha AE, Cosman BC, Whitehead WE. ACG clinical guideline: management of benign anorectal disorders. Am J Gastroenterol. 2014: 109(8); 1141-57

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Please send me more information on the following:

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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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