WELCOME DR. RITU VERMA TO THE CELIAC CENTER!

Dr. Verma recently joined the University of Chicago as Section Chief of Pediatric Gastroenterology and Medical Director of the University of Chicago Celiac Disease Center, succeeding Founder and Medical Director Dr. Stefano Guandalini. She was formerly the Section Chief at Children’s Hospital of Philadelphia (CHOP) and held the Lustgarten Endowed Chair for motility disorders. Dr. Verma grew up in India and Zambia and attended medical school at the University of Zambia. She came to the United States after medical school, completing her residency at Bellevue Hospital in New York and a gastroenterology fellowship at CHOP, where she continued to practice until her recent move to Chicago. Dr. Verma’s primary mission is to take care of both family and child with any digestive disease.

Dr. Verma managed a large population of patients with celiac disease at CHOP and eventually started a formal center there, to provide comprehensive clinical and family-centered care for children with celiac disease. Its focus was early diagnosis, and education geared toward disease management and coping strategies to reduce the burden of the disease on the family and child.

Shortly thereafter, two of Dr. Verma’s three children were diagnosed with celiac disease. Although Dr. Verma herself was diagnosing and caring for celiac patients, she did not immediately recognize the disease in her own son. This experience led her to recognize the importance of physician education and awareness. After her son was diagnosed, Dr. Verma and her family followed the protocol for family screening and discovered that one of her daughters also had celiac disease, and that the whole family carries a gene for it. In keeping with that protocol, she, her husband and her undiagnosed child continue periodic family screening today. Having lived with the disease through her children and as a
Dr. Verma’s research interests focus on prevention: she would like to study the question of “why one person who has the gene gets celiac disease and the next person, also with the gene, does not.” As she considers her own family, she wonders what if “there is some way to actually prevent the disease, not after the fact. Is there somewhere you can figure out why two of my children got the disease and one did not?” Dr. Verma is also very interested in other autoimmune diseases and their relationship to celiac disease.

Dr. Verma has a vision to develop a new clinical program to promote early diagnosis of celiac disease, and to fully support patients and their families through childhood, until they are off to college. She envisions a comprehensive program where every new patient will meet with a dietitian and a psychologist at diagnosis and periodically afterward to discuss dietary and lifestyle changes and their emotional toll. Families will get support to develop a 504 plan for school and will see the dietitian annually on follow-up visits. She explains that those children will return as teenagers, to learn how to keep themselves safe on the gluten-free diet “as they venture out into the world, go out with their friends and become more independent, and again just before leaving home to go to college, where these patients, now young adults, can learn about alcohol safety, safe eating in a dormitory, and so forth.” Dr. Verma is determined to build her vision into a reality at The University of Chicago and, once perfected, will share a model that will set a standard of excellence for celiac clinicians around the globe.

AT THE FOREFRONT OF CELIAC DISEASE

Dear Friends: The University of Chicago Celiac Disease Center is embarking on the next frontier of our work in the fight against celiac disease.

As we move forward, we will be expanding on the Celiac Center’s pioneering legacy. Our founder, Stefano Guandalini, MD, was instrumental in bringing awareness of and expertise in celiac disease to the United States. Dr. Guandalini, who has assumed emeritus status, and Executive Director Carol Shilson, who recently concluded her time in this role, built the Celiac Disease Center into a preeminent institution that addresses this illness through patient care, public advocacy and groundbreaking research. The past decade has seen tremendous progress in these areas, with a substantial increase in diagnosis rates in the United States and the wide-spread availability of gluten-free foods for those who need to follow a gluten-free diet. Our Center has been at the forefront of celiac disease research, discovering and developing new treatments for celiac disease. Our clinical team, comprised of experts in both pediatric and adult celiac disease, works closely with other experts in autoimmunity and intestinal inflammatory disorders.

Our vision is to continue to expand our Center of Excellence in celiac disease—an institution at the pinnacle of expertise and innovation in patient care, treatment and research. We will continue to focus on a multidisciplinary approach to improve the lives of celiac disease patients and their families, from diagnosis to research and clinical trials, education and advocacy. Our ultimate goal is to prevent and cure celiac disease. To this end, the Celiac Disease Center will host the inaugural New Frontiers Symposium on celiac disease at the University of Chicago Medicine on Nov. 23. This day-long educational experience will provide families, patients, and physicians the opportunity to learn about some of the groundbreaking therapies being researched across the globe and the best practices in caring for patients and their families. Our critical priorities are:

• Pioneering research in celiac disease to prevent and cure celiac disease
• Treating patients with associated autoimmune and/or intestinal disorders holistically
• Enriching our infrastructure for clinical trials
• Ensuring a smooth transition from pediatric to adult care
• Helping patients and families cope with celiac disease

With the arrival of Dr. Ritu Verma as Section Chief of Pediatric Gastroenterology and Medical Director of the University of Chicago Celiac Disease Center, we form a unique clinical and research multidisciplinary team that is ideally positioned to build on these priorities. This expertise allows us to develop and implement transformational care for patients, and to educate not just patients, but primary care physicians, schools, and communities. Our dedication to addressing celiac disease makes us fierce advocates on behalf of our patients and their families.

The University of Chicago is an internationally renowned clinical and research institution at the forefront of medicine and multi-disciplinary groundbreaking research. Celiac research has been, and remains, an important focus. Our Center has published numerous ground-breaking discoveries on celiac disease in the highest impact journals such as Nature, Science and Cell. We have made significant discoveries such as a connection between celiac disease and an otherwise innocuous virus, with the goal of developing strategies to prevent celiac disease in genetically susceptible children. We have identified IL-15 and innate immune receptors driving tissue destruction as targets for therapy that are being used to implement clinical trials not only for celiac disease but also other autoimmune disorders. We have revolutionized the entire field by creating the first mouse model of celiac disease. This model now supports leading-edge research around the world and is being used to test several promising new therapies.

We thank Dr. Guandalini and Ms. Shilson to getting us to this place, and we are honored to lead the Celiac Disease Center into the future. Please feel free to reach out to us through our website, cureceliacdisease.org, if you have questions or comments. We look forward to sharing updates with you throughout the year.

We know you share our determination to reach the goal we all share: curing celiac disease. Please consider attending our New Frontiers Symposium on November 23, and making a donation to the Celiac Center, to help fund our efforts and find a cure.

Sincerely,

Ritu Verma, MB ChB
Medical Director, Celiac Disease Center

Bana Jabri, MD, PhD
Research Director, Celiac Disease Center
FROM STEFANO GUANDALINI, MD, FOUNDER OF THE UNIVERSITY OF CHICAGO CELIAC DISEASE CENTER: A GOOD-BYE

Most farewell messages begin with “It is with mixed emotions that I announce…” Well, let me state instead that for me, it is above all with joy that I announce my resignation as the Medical Director of the University of Chicago Celiac Disease Center, something that just felt right for me to do after almost two decades at its helm.

Why joy? It brings me tremendous joy to reflect on our accomplishments. I am so proud of what we have achieved since that day in early 2001 when my dream of creating a center began to become a reality. In just a few short years, we went from a couple of clinicians, a non-existent website and a handful of enrolled patients to one of the most prominent celiac centers nationally and internationally. Today, our outstanding adult and pediatric gastroenterologists take care of thousands of patients. We have also amassed a team of world-class researchers who have published dozens of articles in highly regarded, peer-reviewed journals. We hosted the International Celiac Disease Symposium in 2013 with over 1,000 delegates in attendance. We have offered free celiac blood tests that over the years screened more than 5,000 patients. We have a vibrant website with thousands of FAQs, a strong presence in social media, an updated e-book (Essentials of Celiac Disease and the Gluten-Free Diet) downloaded more than 300,000 times, and countless other educational and advocacy programs that the readers of our e-newsletter, Impact, have come to know. At this juncture, let me reassure you: I have absolutely no doubts that my legacy will remain and prosper in the caring and capable hands of our new Celiac Center leaders, Dr. Ritu Verma (who also succeeds me as Chief of Pediatric Gastroenterology) and Dr. Bana Jabri, who is of course well known to our many followers as the stellar, world-renown researcher that she is.

Plus, make no mistake: while I have elected to step down as the Celiac Center’s Director after 18 years, I will continue to dedicate my time and effort to it and to its mission that I think we are ideally poised to achieve: curing celiac disease.

There is one more change to announce, and this one truly is with mixed emotions: Our wonderful Executive Director, Carol Shilson, is stepping down. Carol has been with us for 12 years, during which time her total dedication, managerial capacities and sharp vision for the Celiac Center present and future have helped forge our structure and have contributed immeasurably to its success. To her I want to express here my deepest esteem and robust, enduring friendship.

To the many donors who have made our success possible and whose support is crucial in maintaining our mission alive: all my sincerest gratitude. To my colleagues whose commitment to the cause I have admired: all my best wishes for effectively bringing the University of Chicago Celiac Disease Center to the next level. Arrivederci!

AND ANOTHER GOODBYE… FROM EXECUTIVE DIRECTOR CAROL M. SHILSON

Thank you, it has been a wonderful 12 years!
In that time, together, we have accomplished more than I could have ever imagined: The celiac disease diagnosis rate has risen significantly; the celiac community has united together considerably, and we are now much closer to curing celiac disease. The milestones made along the way have been groundbreaking and the memories are irreplaceable.

I have been fortunate to work with the brilliant Drs. Guandalini and Jabri and their clinical partners, and to get to know the many passionate advocates, patients, colleagues and donors who have made The University of Chicago Celiac Disease Center the success we see today. I will cherish my time as Executive Director and will continue to advocate from the sidelines, knowing that The University of Chicago Celiac Disease Center will be steadfast in its mission to cure celiac disease.

Thank you again and all my best for continued success!
Carol M. Shilson

A Cure for Celiac Disease is possible ...

We are making it happen.
Donate Now. cureceliacdisease.org
We are all familiar with yeast. But how many of us can actually define it, or say what it does or whether it’s gluten free? Here’s some information on yeast and what types of yeast are safe to eat for those on the gluten-free diet.

Yeast, alluded to in the Bible and in ancient hieroglyphics and first observed under a microscope by Louis Pasteur, is a microscopic fungus. It feeds off sugar in various forms such as sucrose, fructose, glucose, and maltose. A few common sugars used in baking to feed the yeast are cane sugar, honey, molasses, maple syrup, fruit, and starch in flour. Yeast converts sugar into alcohol and carbon dioxide through a process called alcoholic fermentation. This process is what ferments beer and helps bread and baked goods rise.

The purpose of the exercise we call “proofing yeast” is to make sure that the active dry yeast you bought in an envelope is actually alive. If the microorganism is not alive, then it cannot perform its job of fermentation and leavening, even if you provide the yeast with the right growing environment (sugar/starch for food, moisture, and warmth).

To proof yeast, dissolve it in warm water. After 5-10 minutes the mixture should foam up, which indicates that the yeast is alive and can be used. If the mixture does not foam, then the yeast is dead and should be discarded, as it will not result in fermentation or leavening. Proofing yeast is only necessary for active dry yeast and cake yeast and does not need to be done for rapid rise or instant yeast.

What are the different kinds of yeast, and which ones are gluten free?

The main types of yeast are baker’s yeast, brewer’s yeast and nutritional yeast.

**BAKER’S YEAST**

Baker’s yeast is what is used in at-home and commercialized baking. This type of yeast is what helps leaven breads and baked goods.

**NUTRITIONAL YEAST**

Nutritional yeast is a form of powdered yeast that is used as a supplement rather than for leavening or fermenting foods. It is a source of plant protein and vitamins, and it is gluten free. Nutritional yeast is often used for its umami flavor and as a substitute for cheese in vegan dishes.

Brewer’s yeast, sometimes called spent yeast, refers to both the live yeast used to make beer and the spent yeast is what is left over once the yeast has been used to make beer. After multiple uses for fermenting beer, the yeast eventually gives out and can no longer be used for making beer. The leftover yeast can then be used for flavoring food or for animal feed.

Brewer’s yeast can be gluten free but it NEEDS to be labeled gluten free. Otherwise it could be spent yeast, used to ferment beer and often containing gluten. Yeast extracts may also be gluten free but with any products containing the ingredients “yeast extract” or “autolyzed yeast extract”, anyone with celiac disease should check carefully.
The research lab at the University of Chicago Celiac Disease Center, directed by Dr. Bana Jabri, MD, PhD, is always a hub of activity and ideas. Recently it has had two important papers published, that we would like to bring to your attention.

The most recent paper, published in February 2019 in the scientific journal Cell, laid out how chronic intestinal inflammation may have long term effects. Toufic Mayassi, PhD, and colleagues demonstrated for the first time that in the context of celiac disease there is a profound alteration of the immune cells naturally residing in the small intestinal lining. A population of immune cells with distinct reactivity and pro-inflammatory properties expands and takes the place of the naturally occurring cells that can be found in non-celiac individuals. This replacement is thought to be the result of a sequence of immunological events initiated by dietary gluten-driven inflammatory response. However, remarkably, dietary gluten withdrawal was not sufficient to fully restore this cell compartment, suggesting that a permanent alteration occurs in the context of celiac disease.

The second paper, published last year in the journal Cell Host and Microbe, is an expansion of the important work on viruses and celiac disease coming out of Dr. Jabri’s lab. Prior research indicated that reovirus was a likely trigger in those predisposed to celiac disease. This article reports that another virus, norovirus, can interfere in vivo (in mice) with the ability of the immune system to tolerate a dietary antigen, such as gluten. Importantly, human norovirus is a common cause of diarrhea, with a very high incidence especially in children. Much work remains to be done to determine if other viruses could be triggers. Altogether, identifying which viral infections contribute to loss of immune tolerance to gluten is very important because it could conceivably lead to preventive strategies. Indeed, if certain viruses are found to associate with celiac disease onset in large cohorts of patients, protecting people from getting those infections could result in preventing development of celiac disease. Thus, targeted vaccination strategies could serve as a preventive approach in the near future, especially for individuals at high genetic risk of developing celiac disease.

Both abstracts are reproduced here, along with links to the full list of authors.

CHRONIC INFLAMMATION PERMANENTLY RESHAPES TISSUE-RESIDENT IMMUNITY IN CELIAC DISEASE.
Mayassi T1, Ladell K2, Gudjonson H3, McLaren JE2, Shaw DG1, Tran MT4, Rokicka JJ5, Lawrence I5, Grenier JC5, van Unen V1, Ciszewski C1, Dimaano M3, Sayegh HE1, Kumar V1, Wijmenga C1, Green PHR1, Gokhale R6, Jericho H10, Semrad CE11, Guandalini S10, Dinner AR12, Kupfer SS13, Reid HH14, Barreiro LB6, Rossjohn J15, Price DA8, Jabri B17.

ABSTRACT
Tissue-resident lymphocytes play a key role in immune surveillance, but it remains unclear how these inherently stable cell populations respond to chronic inflammation. In the setting of celiac disease (CeD), where exposure to dietary antigen can be controlled, gluten-induced inflammation triggered a profound depletion of naturally occurring Vγ4/Vδ1+ intraepithelial lymphocytes (IELs) with innate cytolytic properties and specificity for the butyrophilin-like (BTN) molecules BTN3/BTN8. Creation of a new niche with reduced expression of BTN8 and loss of Vγ4/Vδ1+ IELs was accompanied by the expansion of gluten-sensitive, interferon-γ-producing Vδ1+ IELs bearing T cell receptors (TCRs) with a shared non-germline-encoded motif that failed to recognize BTN3/ BTN8. Exclusion of dietary gluten restored BTN8 expression but was insufficient to reconstitute the physiological Vγ4/Vδ1+ subset among TCRγδ+ IELs. Collectively, these data show that chronic inflammation permanently reconfigures the tissue-resident TCRγδ+ IEL compartment in CeD. VIDEO ABSTRACT.


MURINE NOROVIRUS INFECTION INDUCES T_{H,1} INFLAMMATORY RESPONSES TO DIETARY ANTIGENS.
Bouziat R1, Biering SB1, Kouame E1, Sangani KA1, Kang S1, Ernest JD1, Varma M4, Brown JJ2, Urbanek K2, Dermody TS1, Ng A1, Hinterleitner R1, Hwang S6, Jabri B9.

ABSTRACT
Intestinal reovirus infection can trigger T helper 1 (T_{h1}) immunity to dietary antigen, raising the question of whether other viruses can have a similar impact. Here we show that the acute CW3 strain of murine norovirus, but not the persistent CR6 strain, induces T_{h1} immunity to dietary antigen. This property of CW3 is dependent on its major capsid protein, a virulence determinant. Transcriptional profiling of mesenteric lymph nodes following infection reveals an immunopathological signature that does not segregate with protective immunity but with loss of oral tolerance, in which interferon regulatory factor 1 is critical. These data show that viral capacity to trigger specific inflammatory pathways at sites where T cell responses to dietary antigens take place interfere with the development of tolerance to an oral antigen. Collectively, these data provide a foundation for the development of therapeutic strategies to prevent T_{h1}-mediated complex immune disorders triggered by viral infections.

Yeast extract is often used in spreads such as marmite and vegemite, which are not gluten free. If a product contains yeast extract, it could also contain barley protein, which is not gluten free and should be avoided. Unfortunately, because barley is not considered one of the major allergens under the Food Allergen Labeling and Consumer Protection Act, it does not need to be listed separately in ingredient lists, so it’s always best to check with a phone call to the company.

Gluten-free brewer’s yeast and gluten-free yeast extracts do exist, if needed for a specific recipe.

RESOURCES:
https://redstaryeast.com/science-yeast/

Courtney Schuchmann is a registered dietitian, specializing in gastrointestinal disorders, at the University of Chicago Medical Center. She obtained her master’s degree and completed her dietetic internship at Rush University Medical Center. She is a nutrition advisor for the University of Chicago Celiac Disease Center and is an active member of the Academy of Nutrition and Dietetics. She provides medical nutrition therapy to a variety of patients within the department of gastroenterology, hepatology, and nutrition services at UChicago medicine. Her nutrition philosophy is to use her knowledge and expertise to help patients with various nutrition related diseases and disorders optimize their nutritional status and improve their overall quality of life.

RECENT AND FUTURE PUBLICATIONS & APPEARANCES

May 20, 2019: Dr. Carol Semrad moderated the American Gastroenterology Association Celiac session (Celiac Disease and Related Disorders) at Digestive Diseases Week in San Diego.

June 6, 2019: Dr. Guandalini received the Distinguished Service Award from The European Society for Paediatric Gastroenterology Hepatology and Nutrition (ESPGHAN) at their annual meeting in Glasgow, Scotland.

July 13 - 15, 2019: Dr. Jabri will deliver a talk for the Rainin Foundation’s Annual Innovations Symposium in Honolulu, HI.

July 16-20, 2019: Dr. Jabri will attend the 19th International Congress of Mucosal Immunology in Australia, and will speak on “Impact of inflammation on tissue resident T cells”.

September 5-7, 2019: Dr. Jabri and Valérie Abadie, PhD and research collaborator with Dr. Jabri, will address the International Celiac Disease Symposium in Paris, France.

Valentina Discepolo, MD, PhD and Carlino Fellow for Research in Celiac Disease at The University of Chicago, has a number of recent publications. They are:

- With Dr. Jabri and other researchers in Nature in July 2018: P31–43, an undigested gliadin peptide, mimics and enhances the innate immune response to viruses and interferes with endocytic trafficking: a role in celiac disease;
- Accepted for future publication in Gastroenterology, Progression of Celiac Disease in Children With Antibodies Against Tissue Transglutaminase and Normal Duodenal Architecture (with other researchers);
- With Dr. Jabri and other University of Chicago researchers, including Romain Bouziat, Cell Host & Microbe: Murine Norovirus Infection Introduces TH1 Inflammatory Responses to Dietary Antigens in Cell Host & Microbe;
- With other researchers, Intestinal Production of Anti-Tissue Transglutaminase 2 Antibodies in Patients with Diagnosis Other Than Celiac Disease in Nutrients, published September 2017.

continued from page 4 >