On November 21, the Celiac Disease Center will host an online symposium that will gather some of the world’s top researchers and clinicians. “Celiac Disease, Autoimmunity, and Beyond” will explore celiac disease as an autoimmune disease with similarities to other autoimmune disorders such as type 1 diabetes.

This approach reflects the most advanced understanding of these conditions, said Bana Jabri, MD, PhD, director of research at the Celiac Disease Center. “Instead of thinking about each autoimmune disorder in isolation, we should be thinking across disorders, and learning from research in each of those diseases,” she said.

This will not only advance understanding of these illnesses, she said, but improve treatment. For instance, antibody therapy, which seeks to block the immune reactions that cause autoimmune disease, is being explored in several of these disorders. Understanding why some patients do not respond could point the way to making these medications more effective.

This approach also reflects patients’ experiences. “Many people with celiac disease are struggling with more than one autoimmune condition,” said Peggy Hasenauer, interim executive director of the Celiac Disease Center and executive director of the Kovler Diabetes Center. “We need to think about how we’re caring for these patients and researching these conditions.”

Speakers span the spectrum of autoimmune disease and immunology. From the University of Chicago Medicine, they include Louis Philipson, MD, PhD, director of the Kovler Diabetes Center, who will discuss genetics and monogenic type 1 diabetes; Eric Pamer, MD, director of the Duchossois Family Institute, who will speak about leveraging the microbiome to treat complex immune disorders; and Alexander Chervonsky, MD, PhD, who will address the role of gluten in type 1 diabetes.

Some of the nation’s top experts in immunology and vaccine development will join the symposium online from across the country and as far away as Australia. Speakers from the Celiac Disease Center will include Jabri; Medical Director Ritu Verma, MD; Carol Semrad, MD; Sonia Kupfer, MD; and Nutrition Adviser Lori Welstead, RD.

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Jabri noted the breadth of research areas represented and the range of speakers, from scientists to pediatricians to dieticians. “It shows the multidisciplinary and highly collaborative nature of the University of Chicago,” she said. The symposium is open to doctors, researchers, nurses, dietitians, patients, and families. Though the research discussed will be highly advanced, it will be described in lay language. This will benefit not just the lay audience, Jabri said, but also clinicians in other fields who are interested in learning about these diseases.

Registration is only $25; sponsorships are covering most of the event’s costs. And chairing one session will be a figure familiar to longtime patients at the Celiac Disease Center: Stefano Guandalini, MD, the center’s founder emeritus.

“Everything that is happening here is based on the legacy of Dr. Guandalini,” Jabri said. “It will be a joy to have him at the symposium.”

More information on the symposium and registration is at www.cureceliacdisease.org/autoimmunity_and_beyond/

THANK YOU TO ALL OF OUR GENEROUS SPONSORS! ESPECIALLY OUR GOLD SPONSOR: BROOKE AND DUNCAN MACLEAN.
NEW TRANSITION PROGRAM FOR TEENS AND YOUNG ADULTS

Children with celiac disease tend to get regular care for one reason: their parents make sure of it.

But what happens when young children grow older and more independent, and when they go away to college or begin life as young adults?

Unfortunately, many of them drift away.

One study found that only 22 percent of patients diagnosed as children were enrolled in a gastroenterology clinic as adults.

Young people stop seeing celiac doctors because “they think they don’t need to,” said Vijaya Rao, MD, an adult gastroenterologist at the Celiac Disease Center. “They stay away from care for years. I see them in their early 30s, after they haven’t been able to adhere to the gluten-free diet or follow up.”

But they do need to keep up with their care. Untreated celiac disease can interfere with growth, increase the risk of developing other diseases such as thyroid disease, type 1 diabetes, and gastrointestinal cancer, and impair young women’s future fertility.

The study looking at adults who had been diagnosed as children found that 86 percent of the women and 21 percent of the men had iron deficiencies, and 32 percent of the group had subnormal bone density.

Young people often feel they have no true home in GI care, said Ritu Verma, MD, medical director of the Celiac Disease Clinic. Teens and young adults don’t want to keep seeing their pediatricians, whose waiting rooms have toys for toddlers. But they also feel ill at ease at adult practices, where clinicians are unaccustomed to addressing the challenges of high school or college.

Verma recently saw via telehealth a former patient who didn’t know where to get care in his city once he turned 18 and aged out of his pediatric GI clinic. “My heart went out to him,” she said.

Here at the center, pediatric and adult gastroenterologists work together closely. Even so, more is needed to guide the transition to adult care and make sure young people stay engaged, said Verma. To meet those needs, the center has created a new initiative: the Transition Program at the Celiac Disease Center.

The Transition Program will work with patients in groups divided by age, such as 14- to 16-year-olds, 17- to 20-year-olds, and 21- to 24-year-olds. Each group will get education specific to their age. “A 14-year-old has different questions than a 22-year-old,” Verma pointed out.

The program will encompass the center’s full range of care. Physicians, nurses, educators, dietitians, and psychologists will all work with young people at each phase of the transition period.

A generous donor has provided seed money to start creating the program’s curriculum. It will be designed in consultation with the ultimate experts: young people themselves. The center is organizing an advisory group of teenage and young adult patients who will specify what information and support they need. Those interested in serving on this group should contact Verma.

Anticipation is high throughout the center.

“It’s really excited about this program,” said Lori Rowell Welstead, nutrition adviser at the Celiac Disease Center, who regularly fields questions from twenty-somethings about whether Corona beer is gluten-free (it is not). “This is a great way to get these patients empowered and able to understand the disease rather than having mom or dad control the environment.”

To support the new Transition Center, click HERE or contact Brad Joutras, bjoutras@mbsd.uchicago.edu.
Some of the most exciting research in celiac disease is focused on the bacteria inside the body—the microbiome.

The microbiome is the vast community of microorganisms and their genes that live inside us, influencing every organ system in our bodies. These collections of bacteria, viruses, and genetic material have been linked to metabolic, inflammatory, autoimmune, infectious and neurologic diseases. Each of us has our own specific microbiome; the differences between them have been linked to differing risks of developing disease.

Microbiome research holds considerable promise for celiac disease. There is evidence that alterations in the microbiome could change the way we digest gluten or trigger an abnormal response to it. But that also means that the microbiome could be used as the basis of a treatment. It might be possible to manipulate the microbiome to prevent celiac disease. Investigators are studying ways to do so, possibly through fecal transplants or probiotics.

UChicago Medicine is rapidly advancing this research. The Duchossois Family Institute (DFI), which studies the microbiome and health, has developed a biobank of 1,200 strains of genetically sequenced and fully characterized bacteria. Next-generation sequencing now allows the DFI to rapidly conduct tens of millions of sequences, enabling investigators to learn what a particular microbe does within minutes.

The goal: to use this knowledge to help patients.

The DFI biobank is invaluable for studies such as those planned by Alexander Chervonsky, MD, PhD, an expert on complex immune disorders. Chervonsky has studied the microbiome and the role of gluten in type 1 diabetes, and is now turning his attention to celiac disease. Investigators are studying ways to do so, possibly through fecal transplants or probiotics.

Chervonsky and his colleagues hypothesized that some microbes process gluten into biologically active substances that contribute to inflammation. But which microbes do that—and how?

The researchers delved into the question using the microbe Enterococcus faecalis, which digests gluten by secreting protease, an enzyme. They fed two versions of E. faecalis to microbiome-free mice: one version that secreted protease and a mutant version that did not.

Of the mice fed the conventional E. faecalis that secreted protease, more than half developed diabetes. Of the mice fed the mutant version that did not secrete protease, none got diabetes.

With that, the lab had done what had initially seemed impossible: it went from hoping to figure out what gluten does to the microbiota, to identifying one protein produced by one strain of bacteria that enables gluten to trigger diabetes.

Chervonsky now plans to collaborate with the DFI, using its large bacteria bank to identify other human microbes that can digest gluten. He will also work with Bana Jabri, MD, PhD, research director of the Celiac Disease Center, to study whether gluten digestion by a microbial enzyme contributes to development of celiac disease in animal models—applying what his lab learned about type 1 diabetes to celiac disease.

Chervonsky will also collaborate with UChicago Medicine gastroenterologists to study gluten-digesting microbes in patients, especially those undergoing a gluten challenge. He hopes to see whether eating gluten changes the microbiome in ways that affect the growth of gluten-digesting bacteria.

This promising research, being pursued across multiple disciplines and departments of UChicago Medicine, brings us ever closer to the Celiac Disease Center’s mission of changing the lives of people with celiac disease.
AS THE WEATHER CHANGES AND MORE TIME IS SPENT INDOORS, experimenting with new foods and creating gluten-free dishes can be a fun and tasty activity. Fortunately, autumn is the perfect season for hearty root vegetables and some delicious fruits!

Root vegetables grow underground all season long and are typically harvested when the weather starts to cool. These veggies are often starchy, but because they grow in soil, they are packed with several vitamins and minerals, as well as important nutrients like antioxidants and fiber. Some examples are carrots, parsnips, fennel bulb, turnips, radishes, potatoes, rutabagas, beets, onions, and garlic. Here are some ways to incorporate these nutrient powerhouses into your autumn meal rotation:

THE GROUND RULES TO ROASTING:
- Preheat oven to 400 degrees Fahrenheit.
- Cut vegetables in a uniform size like 1-inch pieces.
- Place on baking sheet in a single layer, leaving some room between each piece.
- Use 1 tablespoon oil for every pound of veggies. After coating with oil, sprinkle with herbs, salt, pepper, and seasonings to taste. Thyme, rosemary, and sage are great fall flavors!
- Roast for 45-60 minutes, stirring every 15 minutes until veggies appear crisp and give slight resistance when poked with a fork.

My favorite tip is to roast in bulk and use the finished product in meals throughout the week. Here are some ways to use them:

SWEET POTATO HASH: roasted potatoes and sweet potatoes, onions, and parsnips with a few eggs nestled in makes a show-stopping brunch.

PIZZA: cover your favorite GF pizza crust with cheese (goat pairs well with fall flavors), roasted vegetables (try turnips and fennel), optional meat, and fresh rosemary.

QUINOA BOWLS: fill a bowl with quinoa and veggies, then top with meat, shrimp, beans, or tofu. Drizzle with olive oil and vinegar or your favorite sauce.

BREAKFAST (OR DINNER) BURRITOS: GF tortilla + roasted veggies and potatoes + egg/meat + black beans + salsa + cheese = a great start (or end) to the day!

REFRESHING AND RAW
This crunchy beet and citrus salad with thyme gives a refreshing crunch to any meal and pairs well with meat or fish.

2-3 beets or 1 bunch of small beets, greens and stems removed
1 large orange
1 clove garlic
Olive oil
Kosher salt
1-2 tablespoon fresh thyme leaves

Scrub beets and carefully peel off the thin skin of outer layer. Use food processor or box grater to shred beets and garlic clove (remember: beet juice stains; be careful around counter tops and clothing). Add shreds to bowl; zest and juice the whole orange and add to beets. Toss with thyme, olive oil, and salt to taste.

WARM AND HEARTY SOUP
A great way to make a thick and creamy soup without gluten or flour-based thickeners is potatoes. One way is to add 1-2 sweet potatoes to your go-to butternut squash soup recipe. The flavor of the sweet potatoes and butternut squash is sweet, and the texture is so velvety after they are blended together!

DON’T FORGET DESSERT
APPLE CRISP: just swap out regular flour for your favorite GF flour blend and use GF oats (if you include oats in your diet)
MUFFINS: add diced apples instead of blueberries in your go-to GF muffin recipe. Add a sprinkle of cinnamon, nutmeg, and sugar on top before baking.
TOPPER: Cook diced apples with a small amount of water, sugar, and cinnamon over the stove top for 5-10 minutes just until softened. Use as a GF waffle or pancake topping—or over vanilla ice cream!
The Leadership Council has launched! This new fundraising and advocacy group, made up of dedicated supporters of the center’s mission, will be a powerful resource for advancing research and providing superior care at the Celiac Disease Center.

“These are civic leaders who are actively engaged and interested in improving treatment for patients with celiac and advancing research,” said Laura Davis, the council’s inaugural chair. “My hope is that we can educate our board members to be ambassadors for the disease and the center, and create a supportive network for people who have celiac disease—not only in our own communities but in the broader community as well.”

The council, currently comprising nine members, recently met with some of the top researchers at the University of Chicago Medicine to hear about upcoming studies about celiac disease and brain fog, plans for a new transition program to guide young patients into adult care, and new discoveries about celiac and the microbiome.

For Davis, chairing the council is an extension of her family’s longtime connection with the center. She and her husband, Tony, have been instrumental in the center’s founding and development. The Davises have two children, now young adults, with celiac disease.

“We continue to be thrilled with the support, medical treatment, and research at the Celiac Disease Center,” she said. “I just couldn’t be happier to be part of this.”

She is excited about the groundbreaking research being done at the center under research director Bana Jabri, MD, PhD—whose lab developed the world’s first mouse model of celiac disease—and impressed with Jabri’s collaborative approach to working with the most advanced researchers in the field, wherever they are based.

“There’s a sense that the cause is greater than the individual,” Davis said. “It speaks so well to the competence, professionalism, and talent at the University of Chicago.”

The Leadership Council will be an integral contributor to the expanding future of the Celiac Disease Center. And the center remains a central focus of the Davis family, where multiple generations are affected by celiac disease.

“This is an important part of our giving because this is an important part of our lives,” Davis said.
DOUBLE DIAGNOSIS

Living with celiac disease is hard enough. But a significant group of patients must grapple with an additional diagnosis: type 1 diabetes.

The two are closely related. Both are autoimmune diseases. In celiac disease, ingestion of gluten causes the immune system to attack the lining of the small intestine. In type 1 diabetes, the body’s immune system mistakenly attacks insulin-producing cells in the pancreas.

Between five and ten percent of people with type 1 diabetes go on to develop celiac disease. The risk is such that most guidelines call for anyone diagnosed with type 1 diabetes to be screened for celiac. And people with celiac disease are at higher risk of being diagnosed with type 1 diabetes before the age of 20.

Scientists are working to understand the connection. The relationship between the two conditions will be a major focus of the Celiac Disease Center’s symposium on November 21.

There are many questions to be answered, said Ritu Verma, MD, the center’s medical director. Why do some people with diabetes develop celiac disease, but not others—even when they share the same genetic propensity? And why do people with both conditions tend to have few symptoms of celiac disease?

For children, the question is how best to live with both. It isn’t easy, says Verma.

They are usually first diagnosed with diabetes. They and their families must quickly learn how to monitor blood sugar, use a continuous glucose monitor, count carbs, and administer and adjust dosages of insulin.

They settle into these new routines—and then their child is hit with a diagnosis of celiac. “It can be overwhelming,” Verma said. “You’re learning a whole new disease.”

The gluten-free diet starts to heal damage in the small intestine caused by gluten, leading to better absorption of nutrients—including carbs, which further destabilizes blood sugars.

And addressing celiac disease can actually worsen diabetes initially. “When they first go on the gluten-free diet, their blood sugars go out of control,” Verma said.

She explained that commercially processed gluten-free food often has high levels of sugar and fat. Moreover, the gluten-free diet starts to heal damage in the small intestine caused by gluten, leading to better absorption of nutrients—including carbs, which further destabilizes blood sugars.

Moreover, psychosocial challenges multiply. Not only do children have to visit the school nurse if their blood sugar goes high or low, Verma said, but they have to eat special foods in the lunchroom, making them feel even more different from other children.

“It’s really important that those children and families meet with the physician and the educator to learn why it’s important to stay on the gluten-free diet and how that will help them with diabetes in the long run,” she said. “They need to meet with a dietitian who understands both celiac and diabetes, and to work with a psychologist who can help the family and child cope with these two diseases.”
One of her patients, 9-year-old Owen Benjaminson, of Western Springs, Illinois, was recently diagnosed with both type 1 diabetes and celiac disease—within days.

“I started having these sudden stomach aches,” Owen said. “They kept giving me medicine, but nothing was working.”

His parents decided to take him to a nearby emergency room. They suspected celiac disease. Owen’s mother, Kristen, has celiac, and Owen had tested positive for the genetic predisposition. He had been experiencing abdominal pain when he ate cupcakes or pizza, and had recently had the blood test for celiac disease. The family was awaiting the results.

But stomach pain can also be a sign of high blood sugar. Tests at the ER revealed that Owen had diabetes.

“I was kind of shocked,” Kristen said. “My parents were shocked. It kind of crushed my dad, that such a young person had it.” Her father has type 1 diabetes himself.

Owen was sent by ambulance to another hospital, where he stayed for three days to get his blood sugar under control. He got his first insulin shot, and learned that he would have to get these injections every day for the rest of his life. He was still in the hospital when his celiac test results came back. He had celiac disease, too.

“It was hard, especially as a parent,” Kristen said. “You’re thinking, ‘Why is all this happening to this 9-year-old at once?’ But he’s been dealing with it really well.”

For Owen, following a gluten-free diet will be relatively easy. Because Kristen has celiac disease, family dinners were already usually gluten-free. For his diabetes, Owen uses a continuous glucose monitor, gets insulin injections from his parents, visits the school nurse for daily snacks, and compares notes with his grandfather.

“Now they’re diabetes buddies,” Kristen said.

She is grateful that they had to wait for the celiac test results. If they had learned that Owen had celiac disease a few days earlier, she said, they would have assumed that his stomach ache was caused by celiac and would not have taken him to the ER and learned he had diabetes.

The family is glad, too, that Owen is getting care at the University of Chicago Medicine, home to the Celiac Disease Center and the Kovler Diabetes Center.

“Having a family history of both these diseases, I thought it was great that these departments worked so well together,” Kristen said. “And the doctors are outstanding—so informative, so easy to get in touch with. Making the transition there was one of the easiest decisions we made.”