

BEYOND CELIAC 2025 RESEARCH GRANTS



CELLS IN STOOL COULD HELP DIAGNOSE CELIAC DISEASE

New, non-invasive ways to detect celiac disease

SHALEV ITZKOVITZ, PHD | Weizmann Institute of Science (Rehovot, Israel) in collaboration with the Schneider Children's Medical Center (Petah Tikva, Israel)

GRANT TYPE

Research Accelerator

GRANT AMOUNT

\$175,000 for each of two years

WHY IT MATTERS

Celiac disease has been diagnosed and managed the same way for five decades. New biomarkers, or red flags, for celiac disease would be a powerful tool to improve diagnosis, monitor how well someone is doing on the gluten-free diet, speed up clinical trials investigating new treatments, and distinguish celiac disease from non-celiac gluten sensitivity.

The goal of this study is to develop new biomarkers to diagnose celiac disease without a biopsy. New indicators would enable researchers to detect signs of celiac disease before diagnosis, after diagnosis, and after starting a gluten-free diet by looking at cells shed from the intestine in stool.



GUT DETECTIVES FINDING CLUES FOR CELIAC DISEASE

New and non-invasive indicators of disease

MICHAEL FITZPATRICK, MRCP, DPHIL | University of Oxford (Oxford, UK)

GRANT TYPE

Research Accelerator

GRANT AMOUNT

\$175,000 for each of two years

WHY IT MATTERS

Currently, celiac disease blood tests do not correlate well with ongoing intestinal damage, so an invasive endoscopy with a biopsy is needed to assess the damage caused by gluten. This study aims to identify a non-invasive way to assess small intestine damage in those with celiac disease.

Researchers analyzing protein patterns from cells that line the intestine want to identify and quantify proteins involved in celiac disease and compare them to healthy tissue. Indicators of intestinal damage identified in the study could be used to monitor disease activity and measure the effectiveness of celiac disease drugs in clinical trials.



PREDICTING CELIAC DISEASE BEFORE IT STARTS

What are the consequences of waiting for symptoms to begin before diagnosis?

ROK SEON CHOUNG, MD, PHD | Mayo Clinic (MN, USA) in collaboration with the Naval Medical Center (MD, USA) and Icahn School of Medicine at Mount Sinai (NY, USA)

GRANT TYPE

Established Investigator Award

GRANT AMOUNT

\$100,000 for each of three years

WHY IT MATTERS

This study focuses on immune system reactions that occur before symptoms of celiac disease develop. Findings related to proteins could significantly help identify biomarkers that could detect those at high risk of developing celiac disease. Researchers also want to understand the consequences of diagnosing only after celiac disease symptoms occur.

Using Department of Defense blood samples, the team is investigating the structure and function of proteins in the gut, interactions among gut microorganisms and the immune system, and how the proteins and microorganisms change as celiac disease develops.



UNLEASHING THE POWER OF CELIAC DISEASE MODELS

Mini guts mimic the intestine

KATI JUUTI-UUSITALO, PHD | Tampere University (Tampere, Finland)

GRANT TYPE

Established Investigator Award

GRANT AMOUNT

\$100,000 for each of three years

WHY IT MATTERS

Using organoids, miniature intestines grown in a lab, could help overcome some of the limitations of studying celiac disease in the guts of study participants.

This project aims to create a special organoid model that mimics the intestines of people with celiac disease. This new research model could enable scientists to unlock important information about celiac disease more quickly, including how the disease works, progresses, and could be treated.

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UNRAVELING THE BATTLE BETWEEN MICROBES AND CELIAC DISEASE

Helping the immune system to not react to gluten

SÓNIA GONÇALVES PEREIRA, PHD | Instituto Politécnico de Leiria (Leiria, Portugal), in collaboration with the Celiac Disease Research Center at Tampere University (Tampere, Finland)

GRANT TYPE

Established Investigator Award

GRANT AMOUNT

\$100,000 for each of three years

WHY IT MATTERS

These researchers want to understand why only a small percentage of people with celiac disease genes develop the condition, as well as why some people with high levels of celiac disease antibodies remain symptom-free while others experience symptoms even on a gluten-free diet. They are investigating how gluten interacts with gut bacteria and how this contributes to celiac disease development.

The team has already published and presented some of their findings, which include the significance of dietary factors in shaping microbial profiles and their influence on disease development and progression. The results pave the way for designing new dietary strategies based on gluten-free, fiber-enriched ingredients to improve disease management and patient quality of life.



IGNITING DISCOVERIES IN T-CELLS

Immune response to gluten and potential treatments

ARNOLD HAN, MD, PHD | Columbia University (NY, USA)

GRANT TYPE

Early Career Grant Award

GRANT AMOUNT

\$90,000 for each of two years

WHY IT MATTERS

T-cells are white blood cells responsible for protecting the body against harmful microorganisms. In people with celiac disease, the T-cells mistakenly perceive gluten as a threat, leading to harmful immune responses. This research focuses on a specific subtype of T-cells called CD8 T-cells and their contribution to the abnormal immune response in celiac disease.

Many celiac disease drugs currently being developed focus on CD4 T-cells, but by studying CD8 T-cells, researchers hope to uncover new insights that can pave the way for the development of innovative new treatments.

Han's research also includes the study of organoids, tiny mini-organs grown in a petri dish from the intestinal cells of celiac disease patients.



UNDERSTANDING THE EFFECT OF GLUTEN ON YOUR BRAIN

Neurological symptoms are real

IAIN CROALL, PHD | Sheffield University (Sheffield, UK)

GRANT TYPE

Established Investigator Award

GRANT AMOUNT

\$201,140 over three years

WHY IT MATTERS

Gluten-related disorders can cause serious neurological problems, including brain injury, in some people. This team of researchers found a gluten-related antibody called "TG6" and, in previous research funded by Beyond Celiac, showed that TG6 antibody testing is critical to identifying people at risk of neurological problems related to gluten autoimmunity.

Priorities for the new phase of research include determining how frequently patients with "classic" celiac disease test positive for TG6, tracking TG6 status in patients, monitoring cognitive function, and following up on overall well-being. The researchers will also continue to scan patients' brains with MRI to better understand how gluten affects the brain. The study is also designed to untangle questions around low mood and poor dietary adherence.



TEEN TRANSITIONS WITH CELIAC DISEASE

How at-home testing for gluten might help teens

SHAYNA COBURN, PHD | Children's National Hospital (DC, USA)

GRANT TYPE

Early Career Award

GRANT AMOUNT

\$90,000 for each of two years

WHY IT MATTERS

When a child with celiac disease becomes a teenager, there is often a transition from parental control of the gluten-free diet to the teen's own responsibility for keeping themselves healthy. This project intends to identify interventions to improve patient outcomes. Specifically, researchers will investigate how using at-home tests for gluten in urine affects the emotions and behaviors of teenagers with celiac disease. The teens and their parents are also part of an internet-based support program to determine how participation impacts them.