Health & Medicine

Wheat-Belly Blues are the Real Deal, Say Columbia Experts

A diagnostic test for gluten sensitivity could be on the horizon.

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There are an estimated three million people in the US today with celiac disease, an autoimmune condition that is triggered by the wheat protein gluten. But millions more who test negative for celiac say that they, too, become ill after consuming wheat, which has led physicians to wonder: is there another form of gluten intolerance that they have failed to recognize?

Armin Alaedini, an assistant professor of medicine at Columbia University Irving Medical Center and a leading immunologist, has spent the better part of the past decade trying to answer this question. His team has produced a number of influential studies that suggest that many people do suffer from “non-celiac gluten sensitivity,” or NCGS, a condition that is physiologically distinct from celiac disease.

Now Alaedini and his colleagues say they have achieved another big breakthrough: they have identified a group of gluten-specific antibodies that are prevalent in people who test negative for celiac disease but who experience frequent abdominal pain, bloating, and other celiac-like symptoms. They believe their discovery could lead to the first diagnostic test for NCGS. “We’ve been pretty convinced for a few years that NCGS is its own condition, but until now we haven’t had any good biomarkers for the disorder,” says Alaedini.

The Columbia scientists’ past work has shown that people with NCGS, like those with celiac, have an immune response to gluten, with the small intestine mistaking the unusually long and sticky gluten protein for a toxin and attacking it in order to protect the rest of the body from the threat. However, Alaedini’s team has identified crucial differences between the conditions. For example, the researchers have found that people with NCGS, upon ingesting wheat, are likelier to experience a sudden onset of gastrointestinal symptoms and to endure mood swings, anxiety, headaches, and mental fogginess — symptoms that are much less common in celiac disease.

Physicians diagnose celiac disease by looking for a particular antibody in the blood and a distinct form of intestinal damage that is caused by chronic inflammation. No such tests are available for NCGS, and experts suspect that large numbers of cases go undetected, with many people enduring health problems that neither they nor their doctors realize are caused by gluten. “We don’t yet have a firm handle on the long-term health consequences of NCGS, but evidence is mounting that the condition heightens a person’s risk for certain autoimmune disorders, most notably hypothyroidism," says Alaedini.

He and his colleagues are now planning follow-up studies that aim to further identify the characteristics of the antibodies that are indicative of the condition. They anticipate creating a blood test capable of detecting NCGS within the next three to five years.

“When you’re dealing with a condition that’s treatable with dietary modifications, providing a patient an accurate diagnosis can be tantamount to delivering a cure,” Alaedini says. “At the same time, a diagnostic test that rules out NCGS could provide clarity for those who are considering removing gluten from their diet on the false hope that it will address unrelated health problems they may be suffering from.”

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