

Pasta made from green banana flour a tasty alternative for gluten-free diets

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People with celiac disease struggle with limited food choices, as their condition makes them unable to tolerate gluten, found in wheat and other grains. Researchers from the University of Brazil have developed a gluten-free pasta product from green banana flour, which tasters found more acceptable than regular whole wheat pasta. The product has less fat and is cheaper to produce than standard pastas. Their research is published today in the *Journal of the Academy of Nutrition and Dietetics*.

"There was no significant difference between the modified pasta and standard samples in terms of appearance, aroma, flavor, and overall quality," reports lead investigator Renata Puppim Zandonadi, PhD, Department of Nutrition, University of Brazil. "Green bananas are considered a sub-product of low commercial value with little industrial use. For banana growers and pasta product makers, there is the possibility of diversifying and expanding their market."

Researchers compared a standard whole-wheat pasta preparation made from whole wheat flour and whole eggs with one made from green banana flour, egg whites, water, and gums. The alterations reduced the fat content and increased the protein value of the modified pasta, important because [gluten](#) removal typically reduces some proteins responsible for some sensory characteristics of pasta products. The egg whites and gum result in pasta that is less sticky than typical gluten-free pastas, and promote firmness, elasticity, moisture, and uniformity.

The modified pasta decreased [fat content](#) by over 98%. This reduction is

particularly important to patients with [celiac disease](#), because many gluten-free products compensate for the removal of gluten with high levels of lipid content.

Fifty testers who did not have celiac disease and 25 celiac disease patients compared the pastas. In both groups, the modified pasta was better accepted than the standard in aroma, flavor, texture, and overall quality, indicating that the product can possibly be commercialized to a wider market than just those with celiac disease.

The modified pasta had a high quantity of resistant starch, which may help control glycemic indexes, cholesterol, intestinal regularity, and fermentation by intestinal bacteria. "Considering that untreated celiac disease promotes cancer in intestinal cells and a highly inflammatory mucosal status, developing gluten-free products with bioactive compounds such as the ones present in green banana flour is important for celiac disease patients," concludes Dr. Zandonadi. "Patients will benefit from ingesting a product with a better nutritional profile made from an ingredient that is produced and consumed throughout the world."

In an accompanying video, Raquel Braz Assunção Botelho, PhD, discusses the potential benefits of green banana flour-based [pasta](#) for people with celiac disease.

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