

# Differences Between Celiac Disease and Gluten Sensitivity

*By Health Studies Journal, BMC Medicine*

Gluten intolerance is varying degrees of sensitivity to gluten but does not involve the immune system. The symptoms could be flu-like and/or gastrointestinal (diarrhea, flatulence, acid reflux, fatigue or weight loss) but these symptoms are not life-threatening. People who test negative for celiac disease are known as Non-Celiac Gluten Intolerant (NCGI). Consumption of gluten causes the individual gastrointestinal distress but improves when on a gluten-free diet and there is no indication of small intestinal damage. NCGI does not involve the immune system and generally is not life-threatening. Gluten intolerance may affect people with autism, multiple sclerosis or chronic fatigue and by eliminating gluten from their diets could improve some of the diseases symptoms.

Celiac Disease also affects the autoimmune system the same way as gluten allergy but goes one step further. It is a digestive disease which is genetically inherited and results in damage to the small intestine. Consumption of gluten triggers an immune response damaging the small intestine resulting in nutrients passing through the digestive system without being absorbed leading to gastrointestinal distress and eventually, malnutrition. People with celiac disease must follow a gluten-free diet for the rest of their lives. If this action is not taken, the disease may be a contributing factor to other diseases.

A recent study published in the journal BMC Medicine sought to investigate the similarities and differences between celiac disease and gluten sensitivity. The study included 42 subjects with confirmed celiac disease, 26 subjects with gluten sensitivity and 39 healthy controls. Researchers evaluated intestinal permeability to study the expression of genes involved in barrier function and immunity. It was found that those with gluten sensitivity did not have flattened villi or leaky intestinal walls as seen in those with celiac disease. The immune reaction to gluten was also different between the groups. The response came from innate immunity, a primitive system with which the body sets up barriers to repel invaders in the group with gluten sensitivity whereas the subjects with celiac disease rallied adaptive immunity, which is a more sophisticated system that develops specific cells to fight foreign bodies. Although these findings need to be replicated, researchers hypothesize that once immune cells are mistakenly primed to attack gluten, they can migrate and spread inflammation to any part of the body, which may be the reason for such wide variations in the symptoms people experience from a reaction to gluten.<sup>1</sup>

<sup>1</sup> Sapone A, Lammers KM, Casolaro V, et al. Divergence of gut permeability and mucosal immune gene expression in two gluten-associated conditions: celiac disease and gluten sensitivity. BMC Medicine. Mar2011.