

Let's Talk Gluten

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When we hear the word gluten we usually associate it with the fad diet either as a gluten-free diet (GFD) or a healthy diet.

What is Gluten?

It is a storage protein found in grass-related grains like barley, rye, oats, wheat (BROW). It nourishes the seeds during flowering and germination.

Gluten itself is a complex mixture of proteins. In wheat, rye, barley, oats this storage protein exists as gliadin, secalin, hordein and avenins respectively. All these proteins are collectively referred to as gluten. Gliadin has many peptide sequences which are resistant to our gastrointestinal enzymes.

Gluten gives elasticity to the flour dough allowing it to puff and have a chewy texture. Thus it is found in a lot of baked bread and pastries. It is also used as an additive in processed food for texture, flavor, and moisture retention. 80% of the bread wheat contains gluten. To some extent, gluten is also used as a stabilizing agent in ice-creams, ketchups, soy sauces and beers. Hair products and cosmetics may sometimes contain gluten.

Gluten-free diet: FAD DIET?

The gluten-free diet has become a hype all over the media and a lot of health-conscious individuals prefer choosing a GFD to aid in weight loss. Many believe in the myth that GFD is essential for a healthier lifestyle.

PROS- It's the only treatment for patients with celiac disease and gluten sensitivity.

CONS- High cost and inconvenience. May lead to deficiencies in macronutrients and micronutrients like calcium, iron, zinc, vitamin B, folate, vitamin D etc. It increases the risk of constipation as there is a low fiber intake.

Gluten-free diet in gluten associated diseases and Diabetes Mellitus:

5 major illnesses are associated with gluten: celiac disease, dermatitis herpetiformis, nonceliac gluten sensitivity, gluten ataxia, and wheat allergy.

Celiac disease is also known as non-tropical sprue/ celiac sprue/ adult celiac disease and gluten-sensitive enteropathy. This is a common cause of malabsorption of one or more nutrients due to the sensitivity of the gastrointestinal tract to gluten. The three factors that play a role in the disease are environmental, immunological, and genetic.

Symptoms range from significant malabsorption of multiple nutrients with diarrhea, steatorrhea, weight loss, consequences of nutrient depletion like anemia and metabolic bone disorders to the absence of gastrointestinal symptoms. Celiac disease may be associated with Type I diabetes mellitus, Ig A deficiency, Down's syndrome, and Turner's syndrome.

Prevalence of celiac disease is high in those with autoimmune diseases including Type I diabetes mellitus as both of these have shown the involvement of common genetic factors like HLA DQ2 and HLA DQ8 genes along with environmental factors like infections and breastfeeding practices during infancy.

In a child, the diagnosis of celiac disease is usually preceded by the diagnosis of type I diabetes mellitus. Adults with new-onset type I diabetes mellitus are more likely to develop celiac disease.

Gluten-free diet: FOR WHOM?

The first step in achieving GFD is to eliminate all foods, beverages, medications, cosmetics that have gluten in them. Once the symptoms disappear, new items can be added one at a time with proper ongoing evaluation. In case any new symptoms are noticed, the newly added item should be eliminated.

Consult the manufacturer's website and labeling for ingredients.

With careful planning that takes into account carbohydrates, fiber, vitamins, and minerals, those with Diabetes mellitus type I and celiac disease, can achieve a balanced and enjoyable diet.

The FDA terms a food item gluten-free if the product contains <20ppm of gluten or <20mg/kg of gluten.

A gluten-free diet is to be considered if an individual has gluten sensitivity or celiac disease. Its efficacy other than that needed for gluten-sensitive individuals is questionable due to the deficiencies it can cause. The gimmick as a fad diet for a healthier lifestyle may not be as beneficial as it is portrayed.

Lifestyle modification with a balanced diet and regular exercise is the best way to approach healthier living.

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