



COELIAC DISEASE: WHEN A FOOD PROTEIN TURNS VILLAIN

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Abstract

Coeliac disease is a peculiar digestive disorder that occurs in reaction to gluten, a protein found in wheat, rye, barley, oats and hundreds of foods made with these grains. The body's immune system reacts to the gluten and causes damage to the intestine. More common among the people of West Bengal, Punjab and Northwest India and widely prevalent in several part of the world, the diseases is caused by loss of intestinal villi-the tiny, finger-like protrusions which project into the bowel cavity and serve to absorb nutriments. Coeliac disease is a lifelong disorder. However, its treatment is fairly straightforward; it simply requires doing away with all gluten-containing foods. This requires a shift to rice, corn, sorghum (jowar), and millet (bajra) as the staples in the diet. In the initial phase of treatment, people with coeliac sprue require supplemental therapy to help fix the nutritional deficiencies. The disease carries an excellent prognosis if it is diagnosed early and the person adheres to a life-long gluten-free diet. Growth and development in children proceed normally if care is taken to withdraw gluten. Even in adults, once the diet is gluten-free, the intestinal absorptive functions returns to normal, and almost all ill effects of the disease disappear.

Keywords: Gluten, Non Gluten, Food and Villi.

Introduction

In people with Coeliac disease, the body's immune system is triggered by gluten in food. Antibodies attack the intestinal lining, damaging, flattening, or destroying the tiny hair-like projections (villi) in the small bowel. Damaged villi cannot effectively absorb nutrients through the intestinal wall. As a result, fats, proteins, vitamins, and minerals get passed through the stool, Over time, this can lead to malnutrition.

Symptoms and Signs

Coeliac disease may occur at any age, be it children, the young, adults or even elderly. While people must have a genetic predisposition to it, researchers don't know why some people develop an immune reaction after years of tolerance to gluten. But the average length of time it take a person with symptoms to be diagnosed with coeliac disease is four years.

Gastro-intestinal symptoms

Symptoms of coeliac disease can vary from mild to severe. Some people have no symptoms, although they still are developing intestinal damage. Coeliac disease is sometimes misdiagnosed as irritable bowel syndrome. Coeliac disease or gastric ulcers. Digestive symptoms may include abdominal bloating & pain, diarrhea, vomiting, constipation and foul-smelling stool.



- **General Symptoms**

Many people with coeliac disease don't have digestive symptoms at all. But the failure to absorb nutrients may lead to a host of other problems, including weight loss and malnutrition. Signs and symptoms related to weight loss or malnutrition can include anemia, fatigue, osteoporosis, infertility or miscarriage, mouth ulcers, tingling, numbness in the hands and feet and unhealthy swings in blood glucose levels or low blood sugar.

- **Autoimmune and Skin Symptoms**

Some people with Coeliac disease may suffer with other autoimmune disorders, including thyroid diseases and rheumatoid arthritis. Some may develop an itchy, blistering rash known as dermatitis herpetiformis. This rash may begin with an intense burning sensation around the elbows, knees, scalp, buttocks, and back. Clusters of red, itchy bumps form and then scab over. It often first occurs in the teenage years and is more common among men than women. The rash usually clears with a gluten-free diet.

Mood and Memory Symptoms

Some people with Coeliac disease experience depression, irritability, poor memory, and face trouble in concentrating. The strain of having a chronic disease can contribute to problems with mood and memory, particularly when there is chronic pain or fatigue related to anemia.

Warning signs in Children

Coeliac symptoms may start in childhood, even in infants when parents introduce foods that contain gluten. Symptoms can include

vomiting, bloating, pain, diarrhea, and irritability.

Foods which trigger Coeliac disease

Wheat is a staple in Indian culture. Many foods contain gluten in variable amounts and can aggravate Coeliac disease. A wide variety of processed foods also contain gluten. Wheat flour is also used widely in the food industry as a thickener and inexpensive filler in pre-cooked meals, convenience foods, and commercial products and also as an ingredient in lipstick, pills, and other products.

I: Gluten-Containing Foods

- Gluten-rich grains and flours
 - Wheat
 - Barley
 - Rye
 - Oats (oat flour, oat bran, oatmeal)
- Common foods with gluten-rich ingredients
 - Breads and cereals
 - Beverages and dairy products
 - Restaurant foods, sauces and soups
 - Spreads, dressing and mixes
 - Snacks
 - Bakery products and confectionary
 - Meats
 - Desserts and Mithai
 - Alcoholic beverages

II: Foods which May Contain Gluten Unless Certified as Free

- Natural flavorings
- Vinegar or distilled vinegar
- Vegetable gum
- Brown rice syrup
- Food additives and emulsifiers
- Malt or malt flavoring
- Condiments containing distilled vinegar



- Alcohol-based flavoring extracts (e.g., vanilla)
- Caramel coloring
- Vegetable protein
- Oat gum

III: Non-Food Products That May Contain Gluten

Medications that use gluten as a binding agent in a pill or tablet Gluten contamination can also occur in many extraordinary ways. For example, a gluten-free food may come in contact with foods containing gluten, and this may produce a cross contamination. This is likely if a person uses a butter-knife with a few breadcrumbs left on its surface, or uses a toaster which has been used for toasting regular bread, or eats food preparations which have been deep-fried in a cooking medium previously used for frying gluten-containing food items.

associated with multiple DR3-DQ2 haplotypes". *Hum. Immunol.* 63 (8): 677–82. doi:10.1016/S0198-8859(02)00413-5. PMID 12121676.

Fasano A (Apr 2005). "Clinical presentation of celiac disease in the pediatric population". *Gastroenterology (Review)*. 128 (4 Suppl 1): S68–73. doi:10.1053/j.gastro.2005.02.015. PMID 15825129.

"Symptoms & Causes of Celiac Disease | NIDDK". National Institute of Diabetes and Digestive and Kidney Diseases. June 2016. Retrieved 24 April 2017.

References:

- Karpati, S.: *Dermatitis Herpetiformis Clin. Dermatol*, 2012, Jan. 30 (1) 56-9-DOI.
- Fasano, A; Catassi, C (Dec 20, 2012). "Clinical practice. Celiac disease". *The New England Journal of Medicine (Review)*. 367 (25): 2419–26. doi:10.1056/NEJMc1113994. PMID 23252527.
- Newnham ED (2017). "Coeliac disease in the 21st century: paradigm shifts in the modern age". *J Gastroenterol Hepatol (Review)*. 32 Suppl 1: 82–85. doi:10.1111/jgh.13704. PMID 28244672. Presentation of CD with malabsorptive symptoms or malnutrition is now the exception rather than the rule
- Rostami Nejad M, Hogg-Kollars S, Ishaq S, Rostami K (2011). "Subclinical celiac disease and gluten sensitivity". *Gastroenterol Hepatol Bed Bench (Review)*. 4 (3): 102–8. PMC 4017418. PMID 24834166.
- Tonutti E, Bizzaro N (2014). "Diagnosis and classification of celiac disease and gluten sensitivity". *Autoimmun Rev (Review)*. 13 (4-5): 472–6.
- Michalski JP, McCombs CC, Arai T, Elston RC, Cao T, McCarthy CF, Stevens FM (1996). "HLA-DR, DQ genotypes of celiac disease patients and healthy subjects from the West of Ireland". *Tissue Antigens*. 47 (2): 127–33. doi:10.1111/j.1399-0039.1996.tb02525.x. PMID 8851726.
- Kaur G, Sarkar N, Bhatnagar S, Kumar S, Raptap CC, Bhan MK, Mehra NK (2002). "Pediatric celiac disease in India is