

## Health Manifestations of Celiac Disease (CD)

### Section B: Signs, Symptoms, Associated Disorders and Complications

Affected System	Affected Organ	ID No.	Manifestation	Type*	Current Medical Information **	Deficient Nutrient
Body Composition	All	70	Weight Loss, Unexpected <sup>1,3,10,34,36,55</sup>	(S)	<p>[P] Common in people with untreated CD.<sup>55</sup></p> <p>[D] Unexpected weight loss, a classic presentation of CD,<sup>3</sup> is a symptom of malabsorption characterized by abnormal maintenance or loss of fat, muscle and other tissue. Vitamin B<sub>12</sub> deficiency can cause considerable weight loss.<sup>34</sup></p> <p>Anthropometric, biochemical, and bone densitometric assessment performed in 23 celiac children aged 1 to 12 years at diagnosis and one year after GFD demonstrated that a year of GFD allows virtually complete return in body mass composition. At diagnosis, the patients had height, arm muscle triceps, skin folds, subscapular skin folds, fat area index, and bone mineral content significantly lower than controls. After one year on GFD, no significant difference was found between patients and controls in all parameters studied except in height and arm muscle area, which were very near to the normal expected. Serum hemoglobin, iron, and zinc values were below the normal range in more than half of patients at diagnosis and within the normal range in almost all of them after 1 year of GFD. Serum hemoglobin, iron, zinc, triglycerides, proteins, albumin, and calcium values rose significantly during the year of GFD.<sup>36</sup></p> <p>Study defining the correlates of CD in 100 anemic adults without overt malabsorption demonstrated that compared to anemic patients without CD, anemic patients with CD had significant or borderline significant differences for plasma cholesterol, albumin, and body mass index but not for blood hemoglobin, mean corpuscular volume, plasma iron, and ferritin.<sup>10</sup></p> <p>[M] Marked by decreased body mass, decreased serum proteins, and increased stool fat.<sup>34</sup></p> <p>[C] Results from nutritional deficiencies in gluten sensitive enteropathy, and may include diarrhea, vomiting, or nausea.</p> <p>[R] CD-related weight loss rapidly improves on GFD.</p>	Carbohydrate, B-complex Vitamins: (Vitamin B <sub>1</sub> , Vitamin B <sub>2</sub> , Vitamin B <sub>3</sub> , Pantothenic acid, Vitamin B <sub>6</sub> , Vitamin B <sub>12</sub> ) Iron, Manganese, Omega-3 fatty acids, Omega-6 fatty acids, Phosphorus, Protein, Vitamin K, Zinc.
Body Composition	Brain: cerebrum	71	Anorexia <sup>1,2,3,34</sup>	(S)	<p>[P] Common in people with untreated CD.<sup>3</sup></p> <p>[D] Anorexia is a symptom of malabsorption characterized by loss of appetite.<sup>34</sup></p> <p>[M] Marked by no desire to seek or enjoy food.</p> <p>[C] Results from nutritional deficiencies including zinc, phosphorus, potassium, magnesium, iron, thiamin (vitamin B<sub>1</sub>), and niacin (vitamin B<sub>3</sub>) induced by CD. Other causes include nausea, vomiting, chronic gastroenteritis, constipation, abdominal bloating, and pain associated with CD.</p> <p>[R] CD-related anorexia improves quickly on GFD. Resolution may take 3-6 months.<sup>3</sup></p>	Iron, Magnesium, Phosphorus, Potassium, Vitamin B <sub>1</sub> , Vitamin B <sub>3</sub> , Zinc.

+ (S) = Classic sign/symptom; (AT) = Atypical sign/symptom; (AD) Associated Disorder; (C) = Complication.

++ [P] = Prevalence; [D] = Description; [M] = Sign/symptom; [C] = CD related cause; [R] = Response to gluten Free diet (GFD).