

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
Digestive System	Mouth	75	Dental Enamel Defects ^{1,56,57,58}	(S)	<p>[P] Severe grade III or grade IV enamel defects occurred in 10.1% of study patients that included both children and adults with CD.⁵⁶ Demarcated opacities or hypoplasia occurred in 28% of children with CD vs. 14.8% of controls.⁵⁷ Dental enamel defects occurred in 89% of patients with CD and Sjögrens syndrome (SS) and 88% in CD alone compared with only 25% in SS alone.⁵⁸</p> <p>[D] Dental enamel defects are characterized by alteration in the hard, white, dense, inorganic substance covering the crowns of the teeth in genetically determined CD patients. No relation found for calcium concentrations.⁵⁷</p> <p>Study investigating 128 patients on GFD revealed that changes in the permanent teeth may be the only sign of an otherwise symptomless CD. It is important to study the oral cavity of patients suspected of having CD, since no less than 66% of the patients in this study had oral symptoms. In a study by Aine et al., 3% of adult CD patients had grade III - IV enamel defects. In this study, the figure was 10.3%, but this included pediatric patients. In the study of Aine et al., 30% of their children with CD had grade III - IV enamel defects. The difference between the children and adults might indicate that the adults often develop CD after the critical age of 7 years when the crowns of the permanent teeth have developed.⁵⁶</p> <p>Study investigating 82 children with celiac disease for the presence of dental enamel defects and their relation to hypocalcemia or a particular HLA class demonstrated that the presence of HLA DR3 antigen significantly increased the risk of dental lesions, while genotype DR5,7 seemed to protect against enamel defects. A logistic regression analysis of the variables age, serum calcium concentrations, number of affected teeth, type of enamel defect and DR antigens showed that only DR antigens discriminated celiac disease patients with defects from those without enamel defects.⁵⁷</p> <p>Study investigating oral findings in patients with CD and Sjögrens syndrome compared with patients having CD alone and those with SS alone found celiac-type dental enamel defects in 89% in CD and SS and 88% in CD compared with only 25% in SS. The co-occurrence of CD and SS should be recognized because of its effects on dental and oral mucosal health.⁵⁸</p> <p>[M] Marked by demarcated opacities and hypoplasia and associated with yellowing, horizontal grooves, and/or pits on one or more permanent teeth.⁵⁶</p> <p>[C] Results from CD in patients with HLA DR3 genotype before the critical age of 7 years when the crowns of the permanent teeth have developed.⁵⁷ Pathogenesis of these oral lesions is not fully understood.⁵⁶</p> <p>[R] GFD is protective against CD-related dental enamel defects in children while the crowns are developing.⁵⁶ In patients with both CD and SS, a GFD may alleviate autoimmune inflammation.⁵⁸</p>	Not known.

* (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).