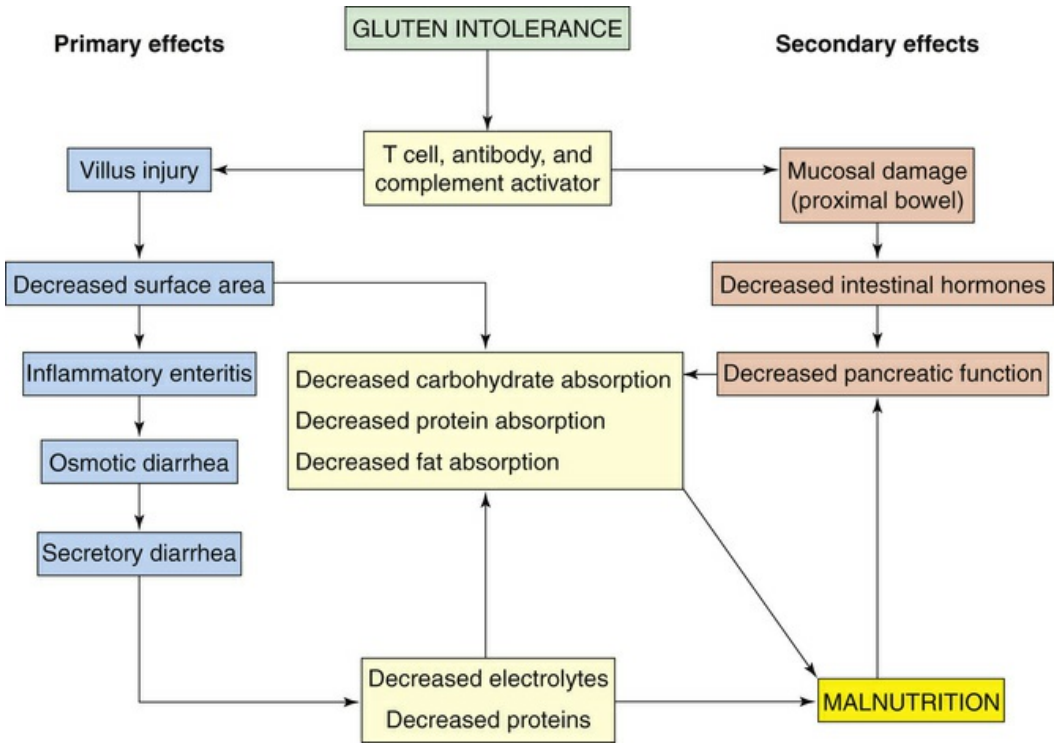


**FIG 22-10** Pathophysiology of gluten-sensitive enteropathy.

Genetic predisposition is an essential factor in the development of celiac disease. Membrane receptors involved in preferential antigen presentation to $CD4^+$ T cells play a crucial role in the immune response characteristic of celiac disease. Children with genetic susceptibilities, namely *HLA-DQ2* or *HLA-DQ8*, are more susceptible to being diagnosed with celiac disease (Paul, Johnson, and Speed, 2013).

Symptoms of celiac disease appear when solid foods such as beans and pasta are introduced into the child's diet, typically between 1 and 5 years old (Box 22-12). Intestinal symptoms are common in children diagnosed within the first 2 years of life. Other symptoms include failure to thrive, chronic diarrhea, abdominal distention and pain, muscle wasting, aphthous ulcers, and fatigue.

**Box 22-12**

## Clinical Manifestations of Celiac Disease

### Impaired Fat Absorption

Steatorrhea (excessively large, pale, oily, frothy stools)