

## Foreword

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Celiac disease is an immune-mediated disorder that stems from an inherited intolerance to dietary gluten that is a common protein found mainly in wheat, barley, rye, and oats. Until recently, celiac disease was considered to be an extremely rare condition in the United States. However, more recent findings suggest that celiac disease is far more prevalent, and that up to one percent of the U.S. population may be afflicted with this greatly under-recognized genetic disorder.

The active form of the disease develops when gluten and/or its breakdown products, detected as foreign invaders, trigger a specific immune inflammatory response in the mucosal cells that line the small intestine. The ensuing reaction causes structural and functional changes in the intestinal lining cells. These are characterized by chronic inflammation of the small intestinal mucosa that leads to flattening of the fingerlike intestinal villi, infiltration of the mucosal lining with lymphocytes, and breakage of the normally tight junctions that interconnect the lining cells. The intestinal lining then becomes hyper-permeable and leaky. As a result, a variety of clinical manifestations may develop either in childhood or later in life. These include bloating, abdominal discomfort and distention, pain and diarrhea. Mal-absorption of fluid, a variety of nutrients, vitamins and minerals may then result in weight loss, failure to thrive, and clinical evidence of multiple deficiency states. Somewhat surprisingly, a majority of individuals afflicted with celiac disease commonly fail to recognize a relationship between ingestion of gluten-containing products and the appearance of symptoms.

An undefined relationship appears to exist between celiac disease and a variety of other clinical conditions that include auto-immune thyroiditis, hypoparathyroidism, osteoporosis, dental disease, IgA nephropathy, an immune-mediated kidney disease, neuropsychiatric conditions, and in some cases, even intestinal lymphoma and carcinoma.

My own interest in celiac disease stems from my participation in a pilot project on the effects of gluten-derived peptides in an animal model system, during my doctoral training in Physiological Chemistry at the Johns Hopkins University School of Medicine. From this early experience, I developed a keen appreciation of the complexity of conducting experiments and of obtaining meaningful data in this area of investigation.

In the summer of 2004, a Consensus Development Conference was convened and conducted by an independent panel of experts in the field of celiac disease to discuss and assess the body of existing medical knowledge then available, and to identify directions for future research. This meeting was sponsored and co-sponsored by various institutes of the National Institutes of Health and by other relevant governmental agencies. A report of the proceedings of this panel and its recommendations was issued.

Recognizing Celiac Disease is a carefully composed, comprehensive, and detailed work on the multifaceted aspects of this condition. This text consolidates updated pertinent information drawn from a myriad of research studies, case reports, and updates on new diagnostic and therapeutic

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approaches in patients with celiac disease in this growing field of medicine. This text will serve as a useful resource to a wide range of healthcare investigators, afflicted patients and many others with an interest in or involvement with this condition.