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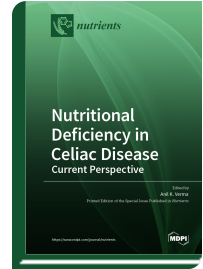
## **Nutritional Deficiency in Celiac Disease**

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ISBN 978-3-0365-4885-2 (Hardback)

ISBN 978-3-0365-4886-9 (PDF)



Celiac disease is a T-cell mediated chronic inflammation of the small intestine that ultimately results in villous atrophy. A lifelong strict gluten-free diet, the only accepted treatment of celiac disease so far, gradually neutralizes immune responses and regenerates damaged villi. Naturally gluten-free (rice, maize, fruits, vegetables, etc.) and processed gluten-free products (commercial products) are advised as substitutes for gluten-containing food. However, in comparison to gluten-containing food, such alternatives are inadequately nutritious and cannot compensate for the necessary nutritional requirements. A complete removal of gluten from celiac patients' diet progressively alters the level of essential nutrients that eventually lead to nutrition imbalances. It has been reported that gluten-free products contain a low amount of essential micronutrients (iron, folate, and vitamin B), fiber, and a higher amount of carbohydrates and lipids compared to gluten-containing products. In recent years, nutritional complications are being reported in celiac disease patients, especially in growing children affected with celiac disease, which has become a serious health issue and requires immediate action. This book focuses on nutritional deficiencies related to celiac disease and provides updated knowledge and new prospects for nutritional deficiencies in celiac disease.



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