

**Title:** Risk of neuropsychiatric diseases in patients with dermatitis herpetiformis and other phenotypes of celiac disease: a cohort study

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**Keywords:**

Dermatitis herpetiformis, celiac disease, gluten-free diet, psychiatric diseases, neurological diseases.

**Abstract**

Increased neuropsychiatric morbidity has been reported in celiac disease, but these associations have hardly been studied in dermatitis herpetiformis (DH). Hence, this study aimed to investigate neurological and psychiatric morbidity in patients with DH and all other phenotypes of celiac disease. The study cohorts consisted of 368 DH patients and 1,072 celiac disease patients diagnosed between 1966 and 2000 and their 1,099 and 3,197 respective matched references. The neuropsychiatric morbidity was studied using the Care register for health care and international classification of diseases codes, and hazard ratios for the different neurological and psychiatric diseases and disease groups were calculated using Cox proportional hazard model.

In DH the overall risk for neurological diseases was not increased when compared with references (HR 1.27; 95% CI 0.94–1.71), but Alzheimer's disease and extrapyramidal diseases were more common in DH when compared with references. In contrast, in other phenotypes of celiac disease an excess risk for overall neurological diseases (HR 1.31; 95% CI 1.09–1.56) and for migraine and headaches were detected. The overall risk for psychiatric diseases was found to be decreased in DH (HR 0.65; 95% CI 0.47–0.90), as were risks for anxiety and substance misuse. In other phenotypes of celiac disease, an increased risk for overall psychiatric diseases (HR 1.20; 95% CI 1.01–1.42), depression, and anxiety disorders were seen.

The neurological and psychiatric morbidity of patients with DH and other phenotypes of celiac disease seem to differ, however the underlying reasons behind these varying disease associations remain unclear.