Association between celiac disease (CD) and multiple sclerosis (MS) is uncommon, although CD and MS share some immunological mechanisms and are both considered T-cell mediated diseases. However, reported MS prevalence in CD population is low and CD prevalence in MS is even lower than in general population. Screening for CD is not part of the standard autoimmune screening in patients suspected for having MS. We report clinical and MRI characteristics of two young female patients receving simultaneous diagnosis of MS and CD. Both patients came to our attention for newly onset myelitis with EDSS 3.0 and 3.5 at onset. Both presented high annualised relapse. Diagnostic MRI unveiled multiple demyelinating enhancing lesions in the brain and extensive involvement of the spinal cord and cerebrospinal fluid was positive for oligoclonal bands. RRMS was diagnosed. None of them referred gastrointestinal symptoms at that time or before. Family history was relevant for gluten sensitivity in one patient and unremarkable in the other. Autoimmune screening showed only a significant titre of CD antibodies (Anti tissue-Translutaminase,anti Deamidated Gliadin peptide, anti-endomysium);it was otherwise negative. Genetic screening demostrated HLA-DQ2 heterodimer. Duodenal biopsy confirmed CD diagnosis and gluten free diet was initiated.These cases add knowdledge about the concomitant occurrence of MS and CD, which is not strongly evinced in literature. A question is whether such association is accidental in persons with genetic susceptibility or they are both part of the spectrum of the same illness. We cannot exclude that anti-gluten reaction triggers MS or that demyelinating lesions represent extra-intestinal manifestation of CD due to antigen cross-reactivity with CNS proteins or against celiac related CNS antigen.IScreening for celiac disease should be implemented in newly diagnosed MS patients, as part of routine autoimmune screening. This is relevant to better understanding pathogenesis and triggers of demyelinating disorder and to estimate patients prognosis.