Understanding the shrinking brain in multiple sclerosis

Multiple sclerosis (MS) is one of the most common disabling neurological disorders in young adults. The disease is traditionally characterized by the presence of inflammatory lesions in the central nervous system, but it is increasingly evident that neurodegeneration plays a crucial role. Neurodegeneration in MS can be visualized as loss of brain tissue using magnetic resonance imaging (MRI). Especially gray matter loss is of interest, as it explains clinical disability in MS to a much better extent than the inflammatory lesions. The mechanism driving gray matter loss is however not understood. Moreover, it is not clear how gray matter loss exactly relates to physical and cognitive disability. This thesis aims to better understand the role of neurodegeneration in MS by focusing on its relationship with other types of MS pathology and its link with clinical impairment.