

## **Window to the brain? - OCT in MS and other demyelinating diseases of the CNS**

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Optical coherence tomography (OCT) has consistently shown thinning of the retinal nerve fiber layer (RNFL) and the total macular volume (TMV) in multiple sclerosis (MS) patients. Measures of retinal atrophy appear to be associated with the extent of brain tissue loss in MS as depicted by MRI derived brain parenchymal fraction (BPF). However, data on grey and white matter atrophy and retinal atrophy are contradictory.

MS is a heterogeneous autoimmune disease, in which a number of environmental factors contribute on the basis of a complex genetic trait. Autoimmune inflammation and neuronal as well as axonal degeneration contribute with large interindividual difference to diverse clinical phenotypes.

Aim of the presentation is threefold: 1. to present disease specific differences in OCT findings in demyelinating disorders of the central nervous system (CNS) 2. to give an overview about recent data that accrued on the association of retinal measures of atrophy and neurodegeneration as depicted by cranial MRI and 3. to propose an MRI/OCT-based algorithm to dissect heterogeneous phenotypes in early forms of MS.