

**The only certain measure of the effectiveness of multiple sclerosis therapy is serum neurofilament level: host**

**J. Kuhle**

*Department of Neurology, University Hospital Basel, Switzerland*

Neurofilaments are highly specific neuronal proteins. They have come closest to clinical application by their higher concentrations repeatedly demonstrated in cerebrospinal fluid (CSF) in all stages of MS, during relapses, their responsiveness to disease modifying treatments in relapsing and progressive MS and their associations with measures of inflammatory and degenerative MRI outcomes. Digital single-molecule array (Simoa) technology improves accuracy of bioassays in the quantification of neurofilament light chain (NfL) in serum and plasma. NfL marks a common final path of neuroaxonal injury independently of specific causal pathways. CSF and blood levels of NfL are highly correlated across various diseases including MS, suggesting that blood measurements likely are useful in assessing response to treatment and predicting future disease activity. Other biomarkers have not been studied to similar extent. Such measures, especially in blood, need further validation to enter the trial arena or clinical practice.