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Magnetic resonance markers of tissue damage related to connectivity disruption in multiple sclerosis.

Elisabeth Solana^{1,1}, Eloy Martinez-Heras^{1,1}, Elena H. Martinez-Lapiscina¹, Maria Sepulveda¹, Nuria Sola-Valls¹, Nuria Bargalló², Joan Berenguer², Yolanda Blanco¹, Magi Andorra¹, Irene Pulido-Valdeolivas¹, Irati Zubizarreta¹, Albert Saiz¹, Sara Llufrí^{1,*} sllufriu@clinic.ub.es.

¹Center of Neuroimmunology. Laboratory of Advanced Imaging in Neuroimmunological Diseases.

²Magnetic Resonance Image Core Facility. Hospital Clinic Barcelona, Institut d'Investigacions Biomediques August Pi i Sunyer (IDIBAPS) and Universitat de Barcelona. Barcelona, Spain.

*Corresponding author at: Hospital Clinic Barcelona, Calle Villarroel 170. CP 08036. Barcelona, Spain.

ABSTRACT

Patients with multiple sclerosis (MS) display reduced structural connectivity among brain regions, but the pathogenic mechanisms underlying network disruption are still unknown. We aimed to investigate the association between the loss of diffusion-based structural connectivity, measured with graph theory metrics, and magnetic resonance (MR) markers of microstructural damage. Moreover, we evaluated the cognitive consequences of connectivity changes. We analysed the frontoparietal network in 102 MS participants and 25 healthy volunteers (HV). MR measures included radial diffusivity (RD), as marker of demyelination, and ratios of myo-

¹ These authors contributed equally to this work (co-first authors).

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