

# Social cognition plays a key role in everyday lives of people with multiple sclerosis

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An international team of multiple sclerosis (MS) researchers showed that longitudinal changes in social cognition are associated with psychological outcomes of daily living, suggesting that social cognition may exert a central role in people with MS. The article, "Social Cognition in Multiple Sclerosis: A 3-Year Follow-Up MRI and Behavioral Study" was

published on March 9, 2021, in *Diagnostics*.

The authors are Helen M. Genova, Ph.D., of Kessler Foundation's Center for Neuropsychology and Neuroscience Research, and Stefano Ziccardi, Ph.D., Marco Pitteri, Ph.D., and Massimiliano Calabrese, MD, of the University of Verona. Dr. Genova also has an academic appointment at Rutgers University.

Some recent MS research, including work led by Dr. Genova, has shown that [social cognition](#) deficits may affect people with MS who otherwise have no other cognitive impairments. Social cognition, which is required to understand and process the [emotions of others](#), is an extremely important skill set for forming successful relationships with others, and deficits in this area can significantly affect a person's quality of life.

Previous studies investigating the prevalence of social cognition impairment among people with MS suggested that impairment tracked with symptoms such as [cognitive](#) fatigue. More research was needed to clarify these results and determine whether changes to the area of the brain called the amygdala—known to be associated with emotions—correlated with social cognition. Moreover, no study had investigated the social cognition performance in people with MS with a longitudinal perspective, meaning that no data existed on the evolution of social cognition deficits over time.

In this three-year follow-up study, MS researchers conducted a longitudinal investigation of the evolution of social cognition deficits and amygdala damage in a group of 26 cognitively-normal people with relapsing-remitting MS. They analyzed the association between social cognition and several domains related to psychological well-being. Concurrently, they investigated the evolution of amygdala lesion burden and atrophy and their association with social cognition performance.

To gather data, the team used a battery of neuropsychological tests; social cognition tasks to assess theory of mind, facial emotion recognition, and empathy; and 3T-MRI to analyze structural amygdala damage. They then compared these findings to baseline data collected from participants three years prior.

The results confirmed that, despite being classified as cognitively normal, people with relapsing-remitting MS showed a significantly lower performance in several social cognition domains as compared to a matched group of healthy controls. These domains include facial emotion recognition, in particular fear and anger, as well as empathy. Longitudinal changes in the social cognition domain were also found to be associated with psychological outcomes of daily living, such as depression, anxiety, fatigue, and social functioning quality of life.

"We confirmed the longitudinal stability of social cognition deficits in cognitively-normal people with relapsing-remitting MS, mirroring the amygdala structural damage and psychological well-being," said Dr. Genova. "These results confirm that social cognition exerts a key role in MS, affecting individuals' everyday lives. Our research highlights the need to identify treatments to improve social cognition in this population."

**More information:** Stefano Ziccardi et al, Social Cognition in Multiple Sclerosis: A 3-Year Follow-Up MRI and Behavioral Study, *Diagnostics* (2021). [DOI: 10.3390/diagnostics11030484](https://doi.org/10.3390/diagnostics11030484)

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