

THE LINK BETWEEN EVENT-RELATED POTENTIALS AND COGNITIVE DYSFUNCTION IN
MULTIPLE SCLEROSIS: A SYSTEMATIC REVIEW

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Introduction: Multiple sclerosis (MS) is one of the most frequent causes of Central Nervous System disease in young persons. It is associated with cognitive impairment in 70% of cases, resulting in a diminished quality of life.

Objective: This systematic review aimed to evaluate if event-related potentials (ERPs) can be a relevant diagnosis tool of cognitive dysfunction in MS.

Methods: Four databases were consulted (PubMed®, Embase, Scielo and Web of Science) until March 10th, 2021. The inclusion criteria were 1) ≥ 18 years old, 2) diagnosis according to specific MS criteria, 3) with or without cognitive complaints, 4) independently of the time of diagnosis and usual medication, and 5) articles written in Portuguese, Spanish, English, and French. Papers should use ERPs, compared with normative values, Scales of Cognitive Evaluation and/or healthy control groups. The expected outcome was ERPs amplitude and/or latency variation (P300, N400 and mismatch negativity – MMN).

Results: 425 articles were obtained initially, with 26 articles in the end. P300 was the most discussed ERP (25 articles). N400 was evaluated in 1 and MMN was addressed in 2 articles. ERPs were compared with MMSE in 2 of them and with MoCA in 3. Other scales were also compared with ERPs in 20 articles.

Conclusion: MS patients with cognitive impairment demonstrated ERPs abnormalities, suggesting that ERPs are an appropriate diagnostic method for cognitive impairment in MS.

