Early Diagnosis of Mild Cognitive Impairment and Alzheimer's with Event-Related Potentials and Event-Related Desynchronization in N-Back Working Memory Tasks

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PII: S0169-2607(18)30275-X
DOI: 10.1016/j.cmpb.2018.06.011
Reference: COMM 4743

To appear in: *Computer Methods and Programs in Biomedicine*

Received date: 27 February 2018
Revised date: 24 May 2018
Accepted date: 14 June 2018

Please cite this article as: Francisco J. Fraga, Godofredo Quispe Mamani, Erin Johns, Guilherme Tavares, Tiago H. Falk, Natalie A. Phillips, Early Diagnosis of Mild Cognitive Impairment and Alzheimer's with Event-Related Potentials and Event-Related Desynchronization in N-Back Working Memory Tasks, *Computer Methods and Programs in Biomedicine* (2018), doi: 10.1016/j.cmpb.2018.06.011

Highlights

- In this study we performed a thorough investigation on the use of event-related potentials (ERP) and event-related (de)synchronization (ERD/ERS) for early Alzheimer's disease (AD) diagnosis.
- We compared behavioural results (reaction time and accuracy), ERP and ERD/ERS responses when healthy elderly (HE) controls, Mild Cognitive Impairment (MCI) and mild AD patients were performing a three-level N-Back working memory task
- Our most important finding was that ERD/ERS analyses have revealed themselves more valuable than ERP, since they showed significant differences in all three group comparisons: HE vs. MCI, HE vs. AD, and MCI vs. AD.